



Final
Interconnection Facilities Study Report
For



For Network Resource Interconnection Service Increase to
St. Leon Wind Facility (+16.5 MW)

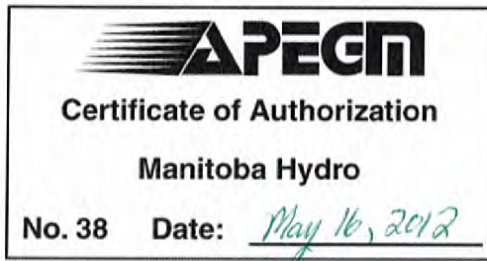
May 16, 2012
Manitoba Hydro
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Revisions

Rev.	Prepared By	Reviewed By	Date	Comment
0	J. Drew S. Shelemy W. Chandrasena M. Wonsiak	J. Jacobson R. Mazur N. Neufeld W. Zhang B. Bagen	April 20, 2012	Preliminary Report
1	S. Shelemy	N. Neufeld M. Fones	May 16, 2012	Final Report

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Summary

The Interconnection Facilities Study Agreement dated December 21, 2011 (the “Interconnection Facilities Study Agreement”) at Exhibit A, indicates that [REDACTED] (the “Generator”) has requested an additional 16.5 MW of Network Resource Interconnection Service for a total output of 116.4 MW for an expanded St. Leon Wind Facility (“Facility”). The expanded Facility would consist of 63 NEG Micon NM82 1.65 MW wind turbines and 10 Vestas V82 Mark 5 – 1.65 MW turbines for a total installed capacity of 120.45 MW.

Based on a letter dated April 25, 2012 the Generator has requested to convert the existing 20.0 MW of ERIS to 16.5 MW of NRIS (to achieve a total of 116.4 MW of NRIS) and 3.5 MW of ERIS for a maximum Facility output of 119.9 MW rather than 116.4 MW as specified in the IFS Agreement. Based on the assumptions listed in Section 3.3 of this Interconnection Facilities Study (IFS) Report, this study concluded:

- a. No TOIF are required,
- b. No ISU are required,
- c. Manitoba Hydro would impose restrictions through an amended Appendix D to the IOA indicating under what system conditions the Facility would be permitted to generate the 3.5 MW of ERIS. Operating studies would be required to define these conditions.
- d. The Facility and Generator Interconnection Facilities (GIF) must be modified/added as follows :
 - i. Provide a total reactive power capability between 33 MVAR inductive to 49 MVAR capacitive (at 1.00 p.u. voltage),
 - ii. Monitoring of the Facility must be installed and upgraded as per TSIR Sections 2.12, 3.15, 3.17, 4.13 and 8.0 Figure 2. The following electrical data is required to be monitored;
 - Mega-watt and Mega-var output,
 - Turbine Status or number of operational turbines,
 - Status of circuit breakers on the transformer and shunt compensation devices,
 - Tap position of the transformer (voltage regulator set-point and status),
 - Bus voltage,
 - Status and settings including amount(s) and ramp down rate of curtailment schemes.
 - iii. Over-voltage Protection delay timer must be reduced to 10 cycles or less.
- e. Further modifications to the GIF may be required if commissioning tests identify the Facility as the source of harmonics identified in Section 7.2.

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1 Introduction

1.1 Background Information

This report documents the results of an Interconnection Facilities Study (IFS) for a proposed generation increase at the St. Leon Wind Facility located near the town of St. Leon, Manitoba. Under the Manitoba Hydro (MH) Open Access Interconnection Tariff (OAIT) [1] [REDACTED] (“Generator”) has been granted 99.9 MW of NRIS. Should the Generator comply with the requirements identified in this IFS Report, the St. Leon Wind Facility NRIS classification would increase to 116.4 MW. This addition will consist of 10 new Vestas V82-Mark 5, 1.65 MW turbines. With the proposed addition, the St. Leon Wind Facility will consist of 63 NEG Micon NM82 1.65 MW wind turbines and 10 Vestas V82 Mark 5 – 1.65 MW turbines with a total nameplate installed capacity of 120.45 MW.

In 2004, an Interconnection Facilities Study (IFS) Report [5] was issued for a 99.9 MW Facility near the town of St. Leon (“Facility”). The Interconnection Facilities Study concluded that about \$3.8 million would be required to install the necessary system improvements to connect the Facility to M.H.’s St. Leon Station. These improvements included a 230 kV breaker and two disconnects plus a 3.2 km 230 kV line along with the associated protection, control and communications equipment. These system improvements were completed and a Facility consisting of 63 NEG Micon NM82 1.65 MW wind turbines (peak-output of 103.95 MW) was interconnected to the MH Transmission System. The IOA was executed on March 15, 2004 for 99.9 MW of NRIS.

On October 29, 2007 the IOA was amended to permit an additional 20 MW of ERIS for the Facility under certain conditions for a total output of 119.9 MW (99.9 MW NRIS + 20 MW ERIS).

On June 14, 2011 the Generator submitted an Interconnection Request to modify the existing Facility so as to provide an additional 16.5 MW of NRIS. The Interconnection Request was modified on February 24, 2012 and March 2, 2012 to clarify the identity of the Generator and other non-substantive issues. On December 21, 2011 the Generator and MH entered into an Interconnection Facilities Study Agreement (“IFS Agreement”). The IFS Agreement was assigned from Algonquin Power Company to [REDACTED] on March 15, 2012. (See Appendix F). Exhibit A to the IFS Agreement outlining the assumptions for the IFS indicated a total output of 116.4 MW. Accordingly, the IFS was conducted assuming the elimination of 20 MW of ERIS

1.2 Interconnection Facilities Study Objectives

As per the MH OAIT, MH uses Reasonable Efforts to coordinate the Interconnection Facilities Study with any adjacent Transmission Operators and Affected Transmission Owners to determine the work required to effect the physical and electrical connection of the proposed Facility at the Point(s) of Interconnection or to otherwise accommodate the Interconnection Request and to address, in accordance with Good Utility Practice, reliability problems identified in the IES.

The electrical switching configuration of the connection equipment, including without limitation, transformer, switchgear and other station equipment, and required transmission lines, if any, are

determined as part of the IFS (Section 3.2 Electrical Configuration). The IFS (Section 3.3.4 Transmission System Assumptions) also identifies any ISU that must be constructed pursuant to higher queued Interconnection Requests and any future transmission expansion plans of MH that must be advanced or in place to accommodate the Interconnection Request. Good faith cost estimates for TOIF and ISU necessary to accommodate the Interconnection Request and the time required to complete construction of Transmission Owner Interconnection Facilities and Interconnection System Upgrades (See Appendix D) are also determined as part of the IFS (Sections 4, 5, 6, 7, and 8 of this IFS Report). The IFS is performed in accordance with Good Utility Practice, including NERC planning standards (to the extent legally binding in Manitoba), applicable regional reliability requirements and planning standards and practices of MH as documented in the MH Transmission System Interconnection Requirements (TSIR).

Although the IFS does not include any analysis of the work required to construct Generator Interconnection Facilities (GIFs) or an estimate of the cost, MH has identified modifications to GIFs and additional GIFs required to meet the MH TSIR. The Generator shall determine the work and costs to construct Generator Interconnection Facilities in accordance with the requirements of MH's TSIR.

1.3 Interconnection Facilities Study Scope

This report documents impacts of the proposed additional 16.5 MW of NRIS from the Facility, in terms of the following analysis:

1. Steady-state; and
2. Transient stability analysis.
3. Short Circuit Fault Levels
4. Power Quality

2 Open Access Interconnection Tariff (OAIT)

There are two classifications of Interconnection Service available to Generators interconnecting to the MH System [OAIT 1.1.24]. They are, Energy Resource Interconnection Service (ERIS) and Network Resource Interconnection Service (NRIS). Delivery of the Facility's output to a specific customer or Point of Delivery is not part of the OAIT [OAIT 1.47 & 2.3] but is covered in a Transmission Service Request (TSR) under the Open Access Transmission Tariff (OATT). *In order for the Generator to obtain the right to deliver or inject energy beyond the Point(s) of Interconnection or to improve its ability to do so, Transmission Service must be arranged by the transmission customer pursuant to the provisions of the MH OATT.*

With the goal of simplifying studies under the OATT for Transmission Service, Out-year cases are examined in the IFS study whenever NRIS is requested.

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3 Interconnection Facilities Study Details

3.1 Interconnection Facilities Study Region

The Brandon Region is defined as the MH transmission system located within the following ten boundary ties:

- Raven Lake to Brandon 115 kV line MR11,
- Reston to Brandon 230 kV line C28R,
- Brandon to Dorsey 230 kV line D54C,
- Portage South to Dorsey D12P,
- St. Leon to Dorsey 230 kV line D14S,
- Letellier to Stanley to St. Leon 230 kV line S60L,
- Glenboro to Rugby (G904Tap) 230 kV line G82R,
- Parkdale to Portage Saskatchewan 115 kV line CP17,
- Parkdale to Neepawa South 115 kV line CN9,
- McPhillips to Portage Saskatchewan 115 kV line RP16.

Major Industrial Load:

This island contains the following major industrial load:

- Enbridge Souris East: 22 MVA,
- Enbridge Glenboro: 51 MVA,
- Enbridge St. Leon: 21 MVA,
- Enbridge Manitou: 14 MVA,
- Enbridge Gretna: 38 MVA,
- Canexus (Brandon): 223 MVA,
- Simplot (Brandon): 26 MVA ,
- Maple Leaf (Brandon): 13.8 MVA,
- TCPL Rapid City: 10.3 MVA,
- TCPL Portage: 10.3 MVA,
- TCPL Carman: 17.2 MVA,
- TCPL Haskett: 17.2 MVA and,
- TCPL Wellwood: 3.5 MVA.

The load noted above is the maximum contracted load, actual powerflow load may vary.

Region Generation:

This island contains the following three generating plants:

- Brandon (2 x 140= 280 MW CTs),
- St. Joseph Wind Facility(138 MW) and,
- St. Leon Wind Facility (99 MW).

3.2 Electrical Configuration

The existing Facility is situated in the Brandon Region, and is located 110 km southeast of Brandon and about 135 km southwest of Winnipeg. The existing Facility consists of 63 NEG Micon NM82 1.65 MW wind turbines with a total installed capacity of 103.95 MW. The 10 new wind

turbines are proposed to be Vestas V82-Mark 5, 1.65 MW units located within the existing Facility and will increase the total installed capacity to 120.45 MW. A Point Of Interconnection Drawing is located in APPENDIX B.

3.3 Interconnection Facilities Study Assumptions

The Generator shall review and confirm the accuracy of the assumptions contained in Sections 3.3.1 and 3.3.2 prior to Interconnection Service being provided.

3.3.1 Facility Assumptions

Section 3 of the Interconnection Facilities Study Agreement requires the Generator to provide technical and modelling data for the Generator Facilities.

1. Generator directed MH to use the models that were provided by Generator for its previous Interconnection Requests. According to these models, each of the existing and new wind turbines supplies their output at 0.6 kV to their own 0.6-34.5 kV transformer which is connected onto an underground cable collector system.
2. The underground cable collector system terminates at the St. Leon Wind Facility Sub-station where a single 34.5/230 kV transformer transforms the 34.5 kV collector output to 230 kV to supply the MH grid via a short 230 kV line terminating at St. Leon Station.
3. The Generator instructed MH to speak directly with the turbine manufacturer regarding the modelling of the Facility. It should be noted that the manufacturer originally manufactured both turbine types and has indicated that the older NEG Micon NM82 1.65 MW wind turbines are identical to the newer Vestas V82-Mark 5, 1.65 MW wind turbines. The turbine manufacturer has also provided a single dynamics model to be used for both turbine types therefore this Interconnection Facilities Study assumes that the NEG Micon NM82 1.65 MW wind turbines are identical to the newer Vestas V82-Mark 5, 1.65 MW wind turbines and can be modelled by a single model.
4. Also according to the model documentation, the St. Leon Wind Facility was modelled in the powerflow models as a single equivalent generator as indicated in Figure 1. The parameter values for each element are documented in APPENDIX C. The following additional assumptions related to the Facility are made,
 - a. All turbine step-up transformers are locked at the nominal (1.00 p.u.) position.
 - b. The turbine can assist in providing voltage control at the 230 kV POI by adjusting its power-factor with a minimum response time of 15 seconds.
 - c. All turbine power-factor correcting capacitors will be tripped with a trip of the wind turbine.

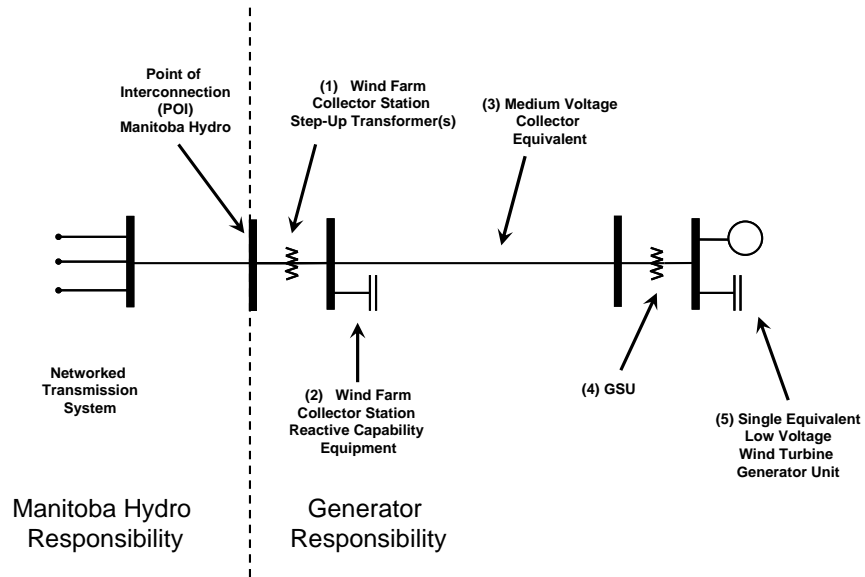


Figure 1: St. Leon Facility Equivalent PSS/E Model

3.3.2 Generator Interconnection Facilities Assumptions

This Interconnection Facilities Study assumes the following Generator Interconnection Facilities specifications as indicated in the March 2004 Report, “St. Leon Wind Farm Interconnection Facilities Study”:

1. 230/34.5 kV transformer has an On-Load-Tap-Changer (OLTC) located on the high side but controlling the 34.5 kV bus within the voltage range of
 - a. Minimum: 0.933 p.u.
 - b. Maximum: 1.037 p.u.
 - c. Control Setting: 0.99 p.u. \pm 0.025.
2. The 34.5 kV capacitor bank consists of 4 steps (One step is provided to meet the TSIR rapid re-insertion requirements therefore only three steps are available to meet the TSIR reactive power requirements):
 - a. Existing step size: 9.6 MVA.
 - b. Proposed step size: 14.4 MVAR.
 and controls the 230 kV bus within the voltage range of:
 - c. Minimum: 1.03 p.u.
 - d. Maximum: 1.05 p.u.
 - e. Reference: 1.04 p.u.

The switching logic is as follows:

Table 1: 34.5 KV Capacitor Bank Switching Algorithm

230 kV POI Voltage (p.u.)	34.5 kV Capacitor Action	Timing
≥ 1.08	Trip 2 capacitors	First Switch 0 seconds/Second Switch 30 seconds
≥ 1.05	Trip 1 capacitor	First Switch 10 seconds/Second Switch 30 seconds
≤ 1.03	Insert 1 capacitor	First Switch 10 seconds/Second Switch 30 seconds
≤ 1.00	Insert 2 capacitors	First Switch 0 seconds/Second Switch 30 seconds

3. An over-voltage relay with a 5 second time delay (can be reduced to a few cycles) will trip all GIF capacitors if the 230 kV POI voltage exceeds 1.10 p.u. (this relay can also respond to a telemetry signals from the Facility Operator or from the MH Operator). For the purposes of this Interconnection Facilities Study it is assumed the 230 kV over-voltage protection only trips the 34.5 kV capacitor banks.

3.3.3 Transmission Owner Interconnection Facilities Assumptions

This IFS makes the following assumptions, related to the Transmission Owner Interconnection Facilities:

1. Protection Logic will trip the Facility (to prevent islanding generation onto local load) if the St. Leon Ring becomes simultaneously opened at positions R2 & R3, R3 & R5 and R3 & R6.

3.3.4 Transmission System Assumptions

This IFS makes the following assumptions, related to the Transmission System:

1. The 16.5 MW NRIS increase to the Facility is assumed not to impact neighbouring utilities, as confirmed by the results of Section 8.2 of this IFS Report
2. Although Brandon generation is designated as a Network Resource under the OATT, the most stressed conditions for the Brandon Region occur when Brandon generation is off-line. All study powerflow models had Brandon generation off-line.
3. Several major Transmission System Projects are planned to be in-service between 2014 and 2019. These major changes and their modelling status for the powerflow models used for this Interconnection Facilities Study are as follows:
 - a. The sectionalisation of the Manitoba to USA 500 KV line by the Riel Sub-Station is included in the 2017 powerflow models.
 - b. Manitoba DC Bipole III is included in the 2017 powerflow models.
 - c. The St. Vital to Laverendrye 230 kV line is included in the 2017 powerflow models.
 - d. St. Vital to Letellier 230 kV line (and related Grunthal load serving Sub-Station) is not included in the 2017 powerflow models as the approval status of this project was uncertain at the time of this study.
4. MISO Prior queued 150 MW Wind Facility G904 tapping the Manitoba to U.S.A. tie-line G82R is included in both the 2012 and 2017 powerflow models.

3.4 Powerflow Models

Under the MH OAIT, NRIS covers reasonable system conditions (boundary conditions). Therefore, several powerflow scenarios, each representing a unique boundary condition, were developed to identify the most stressed conditions for the Brandon region. Note that not all elements or reliability criteria within the Brandon region are stressed for the same boundary conditions.

3.4.1 Steady State

Steady state pre and post-disturbance analysis was performed using the following 2012 and 2017 power flow models derived from the 2010 MRO series:

- 2012 Summer off-peak load,
- 2012 Summer peak load,
- 2012 Winter peak load,
- 2017 Summer off-peak load,
- 2017 Summer peak load and,
- 2017 Winter peak load.

The 2010 MRO Power flow models were updated to represent the expected 2012 and 2017 topology and are henceforth referred to as the 2012 and the 2017 cases respectively.

Steady state post-disturbance analysis for both 2012 and 2017 models was performed at the known most stressed transfers conditions for MH to U.S.A. transfer (MHEX), North Dakota transfer (NDEX), Manitoba/Ontario transfer (MH-OH), Saskatchewan to U.S.A. transfer (B10T), and Ontario to U.S.A. transfer (F3M). Manitoba to Saskatchewan net transfers was maintained at 0 MW. Powerflow summary plots are located in APPENDIX E.

3.4.2 Transient Stability

The impact of the proposed additional Facility generation on the transient performance of the transmission system was studied using the following 2012 and 2017 power flow models derived from the 2010 MRO series:

- 2012 Summer off-peak load,
- 2012 Summer peak load,
- 2012 Winter peak load,
- 2017 Summer off-peak load,
- 2017 Summer peak load and,
- 2017 Winter peak load.

The 2010 MRO Power flow models were updated to represent the expected 2012 and 2017 topology and are henceforth referred to as the 2012 and the 2017 cases respectively.

Transient analysis for both 2012 and 2017 models was performed at the known most stressed transfers conditions for MH to U.S.A. transfer (MHEX), North Dakota transfer (NDEX), Manitoba/Ontario transfer (MH-OH), Saskatchewan to U.S.A. transfer (B10T), and Ontario to U.S.A.

transfer (F3M). Manitoba to Saskatchewan net transfers were maintained at zero MW. Transient analysis included screening voltage and frequency profiles to ensure that the transmission system will function within transient criteria following an event on the system. Powerflow summary plots are located in APPENDIX E.

4 Steady State Analysis

All Interconnection Facilities Study results are based on the boundary conditions which resulted in the most stressed conditions for the Interconnection Facilities Study region. Post generation power flows include the following system topology revision:

- Increase the Facility generation output by 16.5 MW to 116.4 MW.

Post-Facility addition power flows are compared to the Pre-Facility addition power flows to determine whether the Transmission Owner or the Generator was responsible to mitigate transmission system thermal, voltage and reactive power criteria violations.

4.1 Steady State Criteria

If the overloaded segment of a transmission line is station equipment rather than the line conductor, the overload capability of the station equipment will be individually assessed.

When comparing the Pre-Facility increase and Post-Facility increase contingency output files, an impacted Manitoba facility is that which satisfies all three of the following conditions:

- i. The facility is loaded post-facility greater than 100% (rounded up to the nearest percent) of its normal rating (Rate A) for system intact or for contingency conditions,
- ii. The addition of the facility causes the distribution factor to exceed $PTDF \geq 5.0\%$ for system intact conditions or $OTDF \geq 3.0\%$ for a contingency,
- iii. The increase in loading of the facility for system intact or the contingency is greater than or equal to 1.0 MW.

These results were further evaluated to determine if an emergency rating (Rate C) exists for that facility, or any special protection schemes were available that could mitigate the overload.

In addition to overload issues, an impacted facility includes any bulk transmission system bus 100 kV and above in the 'vicinity' of the new facility for which:

1. Bus voltage violates the TSIR (latest revision) bus voltage criteria,
2. Change in Bus voltage is greater than 0.01 p.u.

A post processing screening tool using the above criteria compared the Pre and Post PSS/E ACCC branch flow and bus voltage output files and identified impacted Manitoba Transmission Equipment, sorted them by severity and determined if the proposed additional generation was the cause of the overload.

4.2 Steady State Contingencies

The following contingencies were studied using PSS/E ACCC:

- N-1 contingencies for all Manitoba transmission lines and transformers 100 kV and above
- N-2 contingencies for all 110 kV and above double circuit outages in Manitoba and breaker fail outages approximately two buses back from the St. Leon POI.
- Selected Saskatchewan, Northwest Ontario and Northern U.S.A .contingencies were also run, including Category C disturbances.

The complete list of contingencies tested and contingency files are available upon request.

4.3 Monitored Systems

For 100 kV and above, loading of all branches and voltages of all buses in Manitoba, Saskatchewan, Northwest Ontario and Northern U.S.A . were monitored and recorded for post-processing analysis. The Steady State Screen Reports from this Interconnection Facilities Study are available upon request.

4.4 Steady State Results

4.4.1 Voltage Violations

No steady state voltage violations attributable to the Interconnection Request were identified in the Interconnection Facilities Study region.

4.4.2 Thermal Overloads

With the exception of one Facility (indicated in Table 2 and Table 3) there are no present or future steady state thermal violations attributed to the Generator were identified in the Interconnection Facilities Study region.

Table 2: Existing Thermal Overloads Exacerbated by this Interconnection Request

Case	Element	Thermal Limit (A)	Loading (A)	Pre-Load (%)	Post-Load (%)	Contingency	Type
2012win100-ht0tttm	G82R*	840.92 (1202 emergency) Winter	1376.13 (1212)**	111 (99)**	115 (101)**	D602F	Existing

* Limited by Out-of-Step Blinder currently under review in a MISO project.

** Curtailing the MISO G904 project to its firm limit will help reduce the overloads.

Table 3: Future Thermal Overloads Exacerbated by this Interconnection Request

Case	Element	Thermal Limit (A)	Loading (A)	Pre-Load (%)	Post-Load (%)	Contingency	Type
2017-Win100-mtOtttl	G82R*	840.92 (1202 emergency) Winter	1218.89	98	101	D602F	Existing

* Limited by Out-of-Step Blinder currently under review in a MISO project.

4.4.2.1 Glenboro to Rugby 230 kV Line (G82R)

The Glenboro to Rugby 230 kV Line (G82R) is thermally overloaded for conditions when MH is importing power from the U.S.A. The worst overload occurs prior to the addition of the Riel Sub-Station. This IFS has identified that under these conditions the existing G82R overload is marginally exacerbated after the addition of the 16.5 MW of NRIS at the Facility. MH is currently planning upgrades to G82R as part of the proposed MISO G904 project. These upgrades will include new Out-of-Step Relay settings with an expected in-service date in late 2012. Two scenarios are possible:

1. MISO G904 Project is Cancelled:

To cover the possibility that the MISO G904 project is cancelled, additional analysis without the MISO G904 project in-service was done to identify the incremental impact that the Facility increase has on this overload. This analysis has indicated that without the MISO G904 project the worst G82R overload is 1070 Amps which is well within the emergency rating of 1202 Amps. Accordingly upgrades are not required.

2. MISO G904 Project Proceeds as Planned:

In this case the Facility increases the G82R overload to above the line conductor (and other equipment) thermal rating of 1366 Amps in the near term if the G904 project is generating above its approved firm limit. Regional Operating Guides will ensure that the G904 project is generating its firm approved limit for the conditions associated with this overload.

4.5 Steady State Summary

To grant a total of 116.4 MW of NRIS to the St. Leon Wind Facility, the following TOIF and ISU are required. The tables include the cost estimate and the length of time required to design, procure and construct the upgrade. Where applicable, detailed cost estimates are included in APPENDIX D.

4.5.1.1 Transmission Owner Interconnection Facilities Upgrades

Table 4 lists the Transmission Owner Interconnection Facilities required to grant the Interconnection Service requested:

Table 4: Required Transmission Owner Interconnection Facility Upgrades.

Element	Required Ampacity (A)	Estimate Cost to Generator	Expected In-Service Date
None identified.			

4.5.1.2 Interconnection System Upgrades

Table 5 lists the Transmission Owner Interconnection Facilities required to grant the Interconnection Service requested:

Table 5: Required Interconnection System Upgrades.

Element	Required Ampacity (A)	Estimate Cost to Generator	Expected In-Service Date
None identified.			

5 Transient Stability Analysis

All Interconnection Facilities Study results are based on the boundary conditions which resulted in the most stressed conditions for the Interconnection Facilities Study region. Post generation power flows include the following system topology revision:

- Increase the Facility generation output by 16.5 MW to 116.4 MW.

The impact of the proposed increase in generation on the transient stability of the transmission system was studied. This involved transient simulation in which voltage, frequency, system damping and inadvertent equipment tripping were reviewed to ensure that the transmission system will function within transient criteria [2] [3] [4] following a disturbance on the system.

Modelling data for the Facility is listed in APPENDIX C.

5.1 Transient Stability Criteria

MH utilizes dynamic voltage, dynamic frequency, and rotor angle damping criteria to assess the impact a New Facility has on the Transmission System. The damping of transmission line powerflow swings may be used in place of rotor angle damping for asynchronous generators. As part of the transient stability analysis, MH assesses the swings and the damping of such swings of reactive power flows, real power flows and bus voltages. The transient analysis also confirms whether, following NERC Category B and C contingencies within the study region, the Transmission System remains stable with no cascading outages, loss of load or curtailment of firm transfers and that the Transmission System remains within both voltage and thermal limits. NERC Category C events may permit planned or controlled loss of load or curtailment of Firm Transfers.

Table 6 summarizes MH’s TSIR dynamic voltage criteria at a 230 kV Point of Interconnection (POI) following the clearing of a local or remote disturbance. A Facility must remain connected to the Transmission System for the voltages within those indicated in the table. If the voltage following the clearing of a disturbance at the POI falls outside of those indicated in the table, additional dynamic reactive power will be required.

Table 6: Manitoba Hydro Over- and Under-voltage Requirements at the Point of Interconnection.

Over-Voltage		Under-Voltage	
Duration	Voltage (pu)	Duration	Voltage (pu)
Continuous	1.00 to 1.10	Continuous	0.90 to 1.00
2 sec.	1.10 to 1.30	2 sec.	0.70 to 0.90
200 ms.	1.30	500 ms.	0.70
33 ms.	> 1.30	250 ms.	0.00 to 0.50
		100 ms.	0.00

The worst system overvoltages typically occur when large amounts of power from the HVdc system are lost (e.g. trip of Manitoba-USA 500 kV line followed by an HVdc reduction, or a permanent or temporary block of a bipole). Note that a generator must remain connected for a switching surge (voltages >1.30 pu for a duration of 33 milliseconds).

Table 7 summarizes MH’s TSIR dynamic frequency criteria at the Point-of-Interconnection. A Facility interconnected to the MH network must remain connected to the Transmission System if the frequency at the POI remains within those listed in the table.

Table 7: Manitoba Hydro Frequency Ride-Through Requirements at the Point of Interconnection.

Duration	Under-frequency	Over-frequency
Continuous	59.0 to 60.0 Hz	60.0 to 61.5 Hz
10 minutes	59.0 to 58.7 Hz	61.5 to 62.0 Hz
30 seconds	58.7 to 57.5 Hz	62.0 to 63.5 Hz

A damping index is used to determine the degree of small signal stability following a contingency. Using a Prony Analysis a time-domain signal exhibiting oscillatory behaviour is decomposed into the frequency domain characterized by frequency modes. Each frequency mode consists of a frequency, amplitude and a damping ratio. Modes with a frequency between 0.2 to 2.0 Hz and with an Angle/MW amplitude greater than 1.00 are screened against MH’s TSIR damping criteria summarized in Table 8.

Table 8: Manitoba Hydro Damping Criteria.

Damping Ratio	Action
$r > 0.05$	acceptable
$0.05 \geq r \geq 0.03$	marginal
$r < 0.03$	mitigation required

The MH Transmission System is planned such that the dominant mode has a damping ratio greater than 0.05. This ensures that secondary modes have damping ratios greater than 0.03. Typically a 15 second simulation is used with the last 10 seconds used for the Prony Analysis.

Transient criteria for the neighbouring Transmission System is documented in the “MAPP Members Reliability Criteria and Study Procedures Manual” [10].

5.2 Transient Stability Disturbances

The following NERC Category B (single component) and Category C (multiple component) contingencies were tested to determine the impact that the Facility Increase has on the transient stability of the transmission system:

- All normal clearing 3-phase faults at St. Leon 230 kV Sub-Station and St. Leon POI on transmission lines, and transformer(s),
- All normal clearing 3-phase faults at Letellier and Glenboro 230 kV Sub-Station on the International Tie-lines,
- All slow clearing (breaker failure) 14-cycle single line to ground faults at the St. Leon 230 kV Sub-station.
- Special disturbances to test MH TSIR as detailed in the following sections of this IFS Report.

The complete list of disturbances tested and disturbance files are available upon request.

5.3 Monitored Systems

For 100 kV and above, the voltage and frequency of all buses; changes in the status of DC loading, branches, machines, loads and shunts; and the angle of all machines in Manitoba, Saskatchewan, Northwest Ontario and Northern U.S.A . were monitored. This also included the monitoring of out-of-step relay margins for all International Tie-lines. Transient Stability Summary Reports from this Interconnection Facilities Study are available upon request.

5.4 Transient Stability Results

5.4.1 Under Voltage Capability

The under voltage tolerance for the Facility was tested by simulating normal clearing 3-phase faults at the Point-of-Interconnection Substation on all outlet transmission lines.

For these disturbances the Facility must remain connected to and provide transient support to the Transmission System after the fault clears.

All disturbances were found to pass transient criteria and exhibited little difference between the pre and post Facility addition transient simulation results.

5.4.2 Over Voltage Capability

Historically the 4-cycle 3-phase fault at Chisago on the Forbes to Chisago 500 kV line 601 with a cross-trip of D602F and with a DC reduction was the disturbance used to test the overvoltage ride-through capability of generating plants in southern Manitoba. For summer off-peak load and MHEX export conditions this disturbance results in the worst transient over voltage in Manitoba prior to the addition of the Riel Sub-Station. For this disturbance the Facility must remain connected to and provide transient support to the Transmission System after the fault clears. The Facility remained connected during this disturbance and bus voltage results are summarized in Table 9. These results are consistent with the original Interconnection Facilities Study.

Table 9: Maximum Transient Voltages following the 4-cycle 3-phase fault at Chisago on the Forbes to Chisago 500 kV line

Year	Bus	Pre Generation Increase*	Post Generation Increase**
		Peak Voltage (p.u.)	Peak Voltage (p.u.)
2012	Dorsey 230 kV	1.2753	1.2746
	St Leon Wind Terminal	1.1385	1.1382
	St Leon 230 kV POI	1.2180	1.2177
2017	Dorsey 230 kV	1.1739	1.1732
	St Leon Wind Terminal	1.0820	1.0813
	St Leon 230 kV POI	1.1378	1.1431

* Existing Facility has 28.8 MVAR of capacitors on-line.

** Upgraded Facility trips has 43.2 MVAR of capacitors on-line.

This IFS identified that the worst transient overvoltage after the Riel Sub-Station is in-service occurred for a Single Line to Ground Fault at St. Leon Sub-Station with breaker R1 failure, the fault is cleared by tripping the St Leon to Glenboro 230 kV line (S53G) and the St. Leon to Stanley to Letellier 230 kV line (S60L). The worst system conditions were found to be when MH is importing power under a summer peak-load low NDEX conditions. Under these conditions the Facility was found to trip on over-voltage before the 34.5 kV capacitor band trips out (assuming 5 second 34.5 kV capacitor bank trip delay for the 230 kV bus 1.10 p.u. over-voltage protection). The Facility trip is the result of the 34.5 kV capacitor banks remaining on-line unnecessarily during a transient overvoltage. Decreasing the trip delay to 10 cycles or less would prevent transient overvoltage from exceeding the turbine overvoltage limits and prevent the Facility from tripping out. Refer to Figure 2 and Figure 3 for plots of the St. Leon 230 kV & 600 V turbine terminal bus voltages and St. Leon Wind Facility power output with a 5 second over-voltage protection delay. Refer to Figure 4 and Figure 5 for plots of the St. Leon 230 kV & 600 V turbine terminal bus voltages and St. Leon Wind Facility power output with a 10 cycle over-voltage protection delay. The results with a 10 cycle trip time are summarized in Table 10.

Table 10: Maximum Transient Voltages following the Single Line to Ground Fault at St. Leon Sub-Station with breaker R1 failure

Year	Bus	Pre Generation Increase*	Post Generation Increase**
		Peak Voltage (p.u.)	Peak Voltage (p.u.)
2012	Dorsey 230 kV	1.0980	1.0979
	St Leon Wind Terminal	1.0734	1.0733
	St Leon 230 kV POI	1.0920	1.0920
2017	Dorsey 230 kV	1.0850	1.0850
	St Leon Wind Terminal	(1.2750***) 1.0846	(1.2942***) 1.1062
	St Leon 230 kV POI	(1.1774***) 1.0998	(1.1811***) 1.1048

* Existing Facility has 28.8 MVAR of capacitors on-line.

** Upgraded Facility trips has 43.2 MVAR of capacitors on-line.

*** 5 second trip delay for overvoltage protection.

For the purposes of this report it is assumed the 230 kV over-voltage protection only trips the 34.5 kV capacitor banks with a 5 second delay as indicated in Section 3 of this IFS Report.

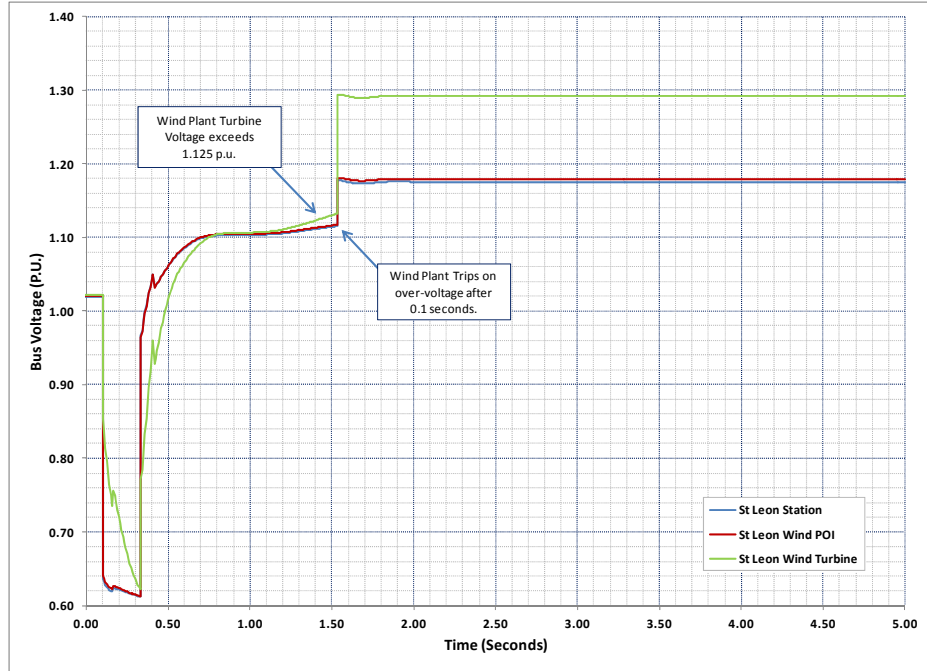


Figure 2: Bus Voltages with 5 second over-voltage capacitor tripping protection.

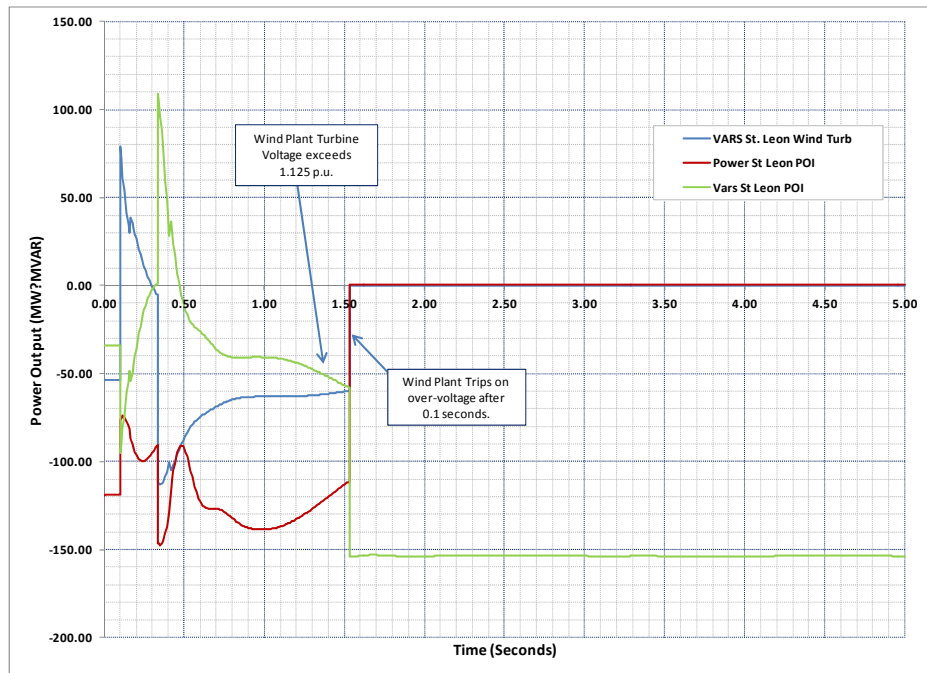


Figure 3: St. Leon Wind Facility power output with 5 second over-voltage capacitor tripping protection.

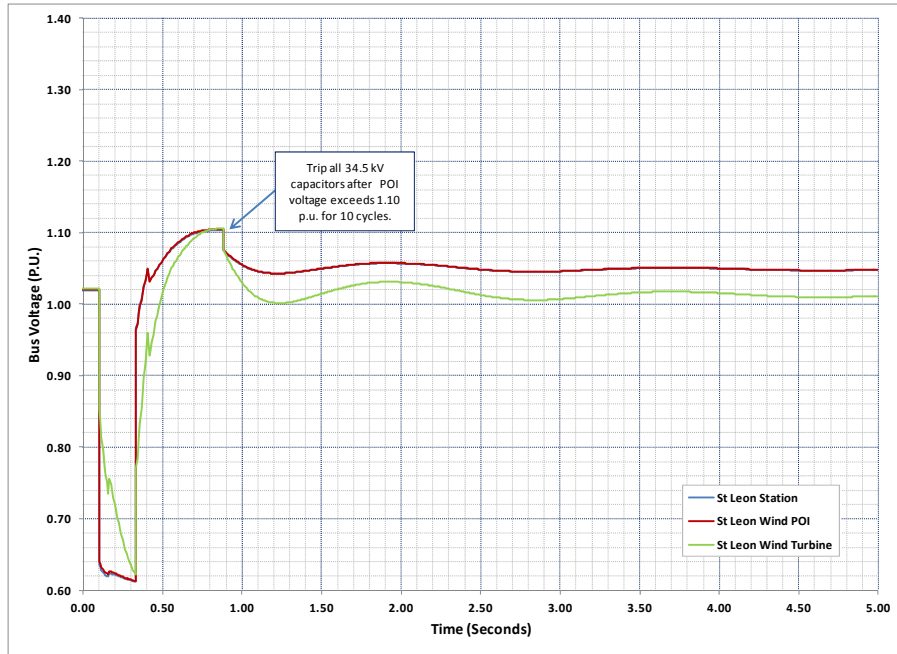


Figure 4: Bus Voltages with 10 cycle over-voltage capacitor tripping protection.

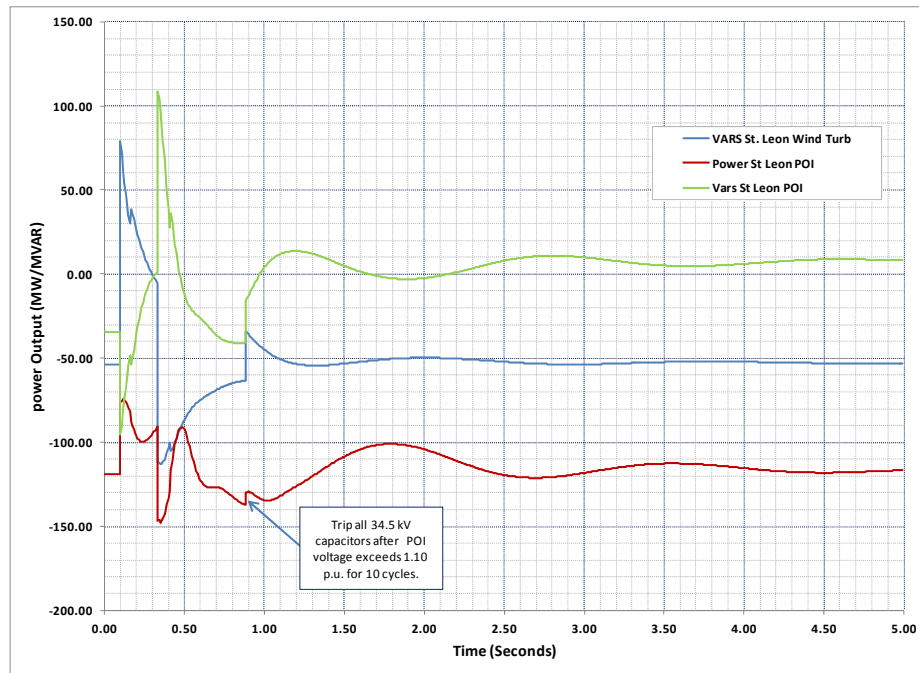


Figure 5: St. Leon Wind Facility power output with 10 cycle over-voltage capacitor tripping protection.

5.4.3 Under Frequency Capability

The under-frequency tolerance of the expanded Facility was tested by simulating the loss of one Manitoba HVDC bipole with no cross-trip of Manitoba-Ontario tie lines. The worst system condition was found to be when MH is importing power under winter peak-load high NDEX conditions. The Facility successfully rode through the disturbance and it should be noted that the system frequency did not drop to less than the St. Leon Wind Facility low-frequency protection settings of 57 Hz. This conforms with the TSIR, provided the Facility model is accurate.

5.4.4 Over Frequency Capability

The over-frequency ride-through capability of tolerance of the expanded Facility was tested by a NERC Category D disturbance which involved a trip of the 500kV line D602F with failure of the MHDC reduction SPS. This disturbance resulted in a cascading trip of all Manitoba to USA tie-lines and a MH system frequency exceeding 61.5 Hz (Frequency in the USA does not exceed 60.5 Hz or drop below 59.5 Hz). The high frequency in Manitoba resulted in the trip of all Manitoba wind facilities. Based on the models provided, the Facility can operate continuously for frequencies in the range 57.0 Hz to 61.5 Hz but will trip out if turbine terminal frequency is greater than 61.5 Hz for more than 0.100 seconds. As the frequency increases on the Transmission System, the model indicates that the Facility will reduce its output with a 5.0 % droop rate until 61.5 Hz is reached, after which the entire Facility will trip off. MH will accept this over-frequency tolerance for a 120.45 MW wind interconnection at the St. Leon POI.

Figure 6 indicates that the St. Leon Wind Facility will meet the over frequency capability Section 4.5.2 of the TSIR.

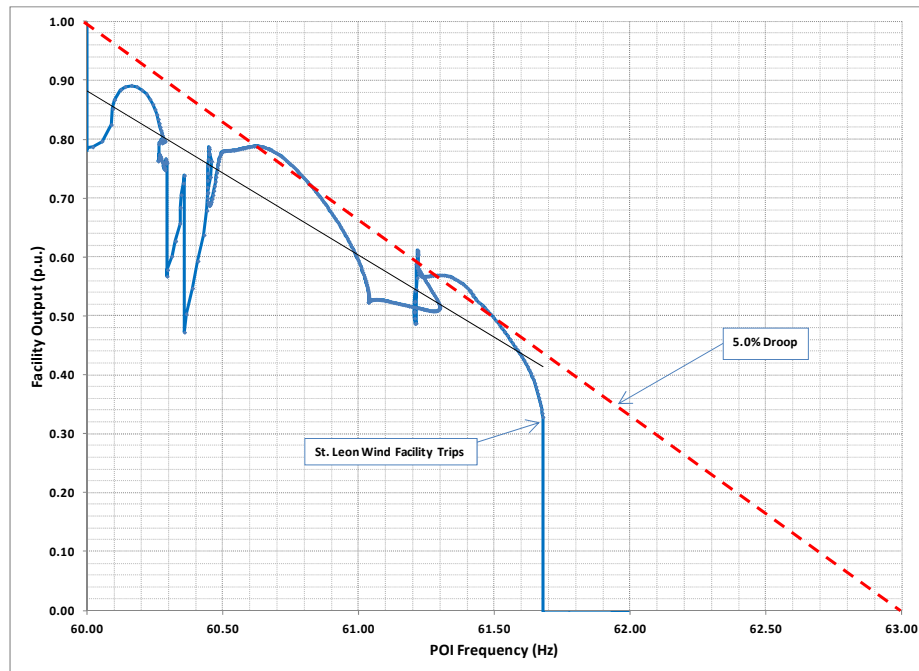


Figure 6: St. Leon Wind Facility Over-Frequency Droop.

5.5 Transient Stability Summary

To grant a total of 116.4 MW of NRIS to the Facility the following transient stability concerns and requirements must be addressed:

5.5.1 Transmission Owner Interconnection Facilities and Interconnection System Upgrades

To grant a total of 116.4 MW of NRIS to the Facility no transient stability concerns were identified that would require new or upgraded TOIF or ISU.

5.5.2 Supplemental Information on the Generator Interconnection Facilities

This Interconnection Facilities Study has determined that for Interconnection Service of 116.4 MW to the Facility, the existing Generator Interconnection Facilities (GIF) will no longer meet the requirements of the MH TSIR, as required by Section 4.1.1 of the Interconnection Operating Agreement (IOA). The following modifications to the Generator's existing GIFs, as well as the addition of new GIFs, will be required in order to achieve compliance with the MH TSIR:

1. Under certain stressed conditions the St. Leon Wind Facility will not meet overvoltage tolerance requirements as specified in Sections 2.3, 3.6 and 4.1 of the MH TSIR. The problem is related to the 230 kV bus over-voltage protection which trips all Facility 34.5 kV capacitor banks. This study found that for certain transient overvoltage conditions, the Facility will trip off-line before the 34.5 kV capacitor banks do. **This Interconnection Facilities Study identified that the 230 kV bus over-voltage protection which trips all Facility 34.5 kV capacitor banks must have a delay time of 10 cycles or less.**

6 Short Circuit Analysis

6.1 Short Circuit Summary

The fault levels at the St. Leon Sub-Station are provided in Table 11. The addition of 16.5 MW of generation has no impact on the breaker’s maximum symmetrical interrupting capability [5] .

Table 11: Fault levels at St. Leon Sub- Station (operating year).

Station	Fault Type	Existing 105 MW Wind (kA)	With 120.45 MW Wind (kA)	Breaker Capability (%)
230 kV	Single line-to-ground fault	7.23	6.6	26.1
	3-phase fault	6.52	7.3	
66 kV	Single line-to-ground fault	1.69	1.7	38.4
	3-phase fault	7.26	7.3	

7 Power Quality Analysis

For the purposes of power quality analysis it was assumed that the Generator will install three 16.3 Mvar shunt capacitors to meet the reactive power requirements of the Facility. Any harmonic issues will be measured, identified and corrected during commissioning.

7.1 Dynamic Voltage Fluctuations

MH Power Quality Specification (PQS2000) Table 9 defines the design limits for dynamic voltage fluctuations at the POI.

The shunt reactive compensation on 34.5 kV bus will consist of 16.3 Mvar shunt capacitor banks. Switching shunt capacitor banks will result in voltage fluctuations. According to Power Quality Specification, if the dynamic voltage fluctuation at POI is less than 2%, no restrictions on switching will be applied.

The voltage fluctuations due to capacitor bank switching were evaluated under system intact and n-1 contingency (loss of Dorsey – St. Leon 230 kV line) scenarios. The three phase fault levels at POI under system intact and n-1 contingency scenarios were found to be 2750 MVA, and 1900 MVA respectively. The voltage fluctuation due to switching operation of a 16.3 MVAR capacitor bank under system intact and n-1 contingency at POI will be less than 1%. Therefore, no restrictions are required on switching shunt capacitor banks on 34.5 kV bus.

7.2 Current and Voltage Harmonic Distortion

Harmonic impedance scans at POI show a parallel resonance around fifth harmonic before 34.5 kV capacitor banks are switched. If three 16.3 MVAR capacitor banks are switched, the resonance frequency will be shifted to around third harmonic. A series resonance frequency was found to be around 5th harmonic before the capacitor banks are switched and around 4th harmonic when all three capacitor banks are switched.

The voltage harmonic distortion depends on the extent of harmonic current sources in this area. Commissioning tests will measure the current and voltage harmonic distortion and compare them with the maximum values given in the Power Quality Specification. The current and voltage harmonic distortion measurement limits are given in section 2.4.1 and 2.4.2 of the Power Quality Specification, and design limits are given in section 2.3.2.1 and 2.3.2.2.

If commissioning tests indicate that the current and/or voltage harmonics exceed the Power Quality Specification or if harmonic currents overload capacitor banks connected to the MH transmission network, Generator may be required to modify its GIF in order to comply with the TSIR.

8 Other Applicable Transmission System Interconnection Requirements

8.1 Reactive Power Capability

This section identifies the minimum reactive power capability for the Facility at the POI. The Generator is responsible for designing and constructing their Facility to supply the reactive power requirements of their Facility (including all the collector system, turbine unit transformers and the 34.5/230 kV step up transformer).

8.1.1 Reactive Power Criteria

Section 9 of the IOA requires the Generator to supply reactive power to the Transmission System. The TSIR specifies two requirements both of which may be applicable to a Facility. The first requirement specifies the minimum reactive power requirement applicable to all Facilities. Note that the power factor requirements could be larger than this minimum depending on transient stability analysis. These dynamic reactive power requirements if any are determined in Section 5 of this IFS Report. The second requirement is related to the technology the Generator uses to provide the reactive power, in particular additional requirements imposed upon capacitor banks. These two requirements are specified below.

Requirement 1: Sections 3.4, 3.5, 4.4, and 8.0 of the TSIR states that any Generator Facility greater than 10 MW comprised of induction type generators (such as may be connected to wind turbines) must be able to provide reactive support that is capable of controlling the voltage level when the generator is generating name plate capacity measured at the Point of Interconnection. Table 12 and Figure 7 summarize MH’s TSIR minimum reactive power requirements at the Point of Interconnection (POI) for a Generator Facility consisting of induction machines. ***The reactive power requirements are based on the nameplate total installed capacity of the Facility. For the St. Leon Wind Facility this is 120.45 MW.***

Table 12: Manitoba Hydro minimum Reactive Power Requirement at the POI for Facilities consisting of Induction Machines

Power Factor	Power Factor (P.F.)	Facility	Applicable POI Voltage Range (p.u.)
Leading	0.95 (Inductive)	Absorbs Reactive Power	0.95 to 1.10
Lagging	0.95 (Capacitive)	Provides Reactive Power	0.90 to 1.05

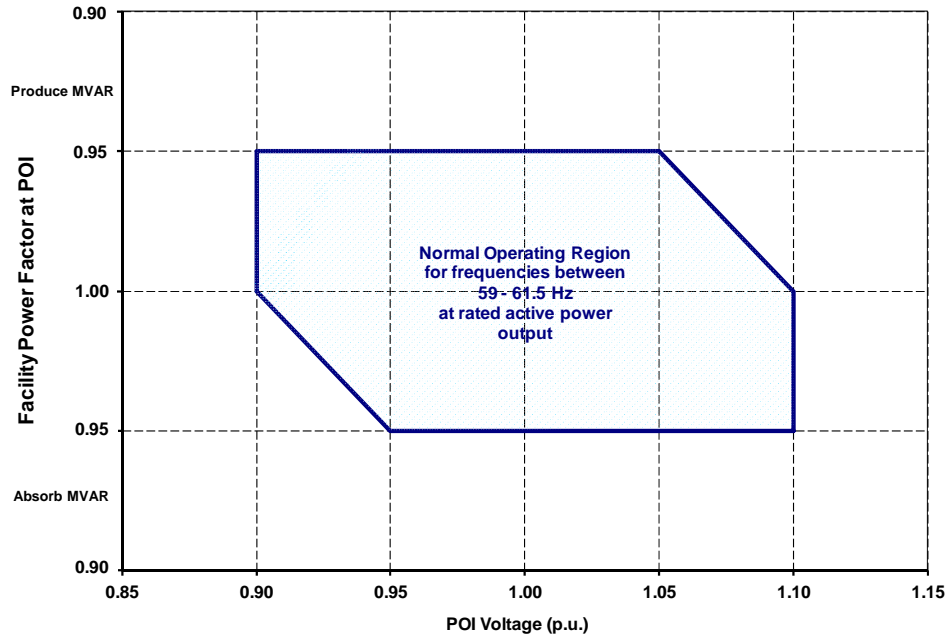


Figure 7: Reactive Power Requirement versus POI Voltage Range for Facilities with Induction Generators

Requirement 2: Section 4.5.1 of the TSIR states that Facilities relying on mechanically-switched shunt capacitors to meet the reactive power requirement must have either,

1. capacitor banks equipped with “rapid discharge” circuits capable of rendering the capacitors available for re-insertions within 5 seconds of de-energization or;
2. Additional switched shunt capacitors added as an alternative to a “rapid discharge” circuits such that the full rating is available for re-insertion.

Facilities having their reactive power requirements made up through fixed capacitor(s) or shunt reactor(s) will have the step size dictated by power quality voltage fluctuation limits during switching, transient stability criteria and by a $\pm 0.5\%$ voltage set-point tolerance. MH TSIR requires that the Generator to provide voltage control at the Point of Interconnection.

8.1.2 Facility Reactive Power Requirement

Using the criteria in Table 12, at the POI a power factor of 0.95 at 0.90 pu voltage on a 120.45 MW wind plant corresponds to 40 MVAR capacitive. At the POI a power factor of 0.95 at 1.10 pu voltage on a 120.45 MW wind plant corresponds to 40 MVAR inductive. Based on transient stability analysis of Section 5 of this IFS Report there are no additional reactive power requirements other than changes to the 34.5 kV capacitor bank trip delay for the 230 kV bus 1.10 p.u. over-voltage protection (as identified in Section 5.4.2). Table 13 specifies the continuous reactive power capability for the expanded St. Leon Wind Facility, depending upon the technology used to provide the reactive power additional capacitive capability maybe required.

Table 13: Required Continuous Reactive Power Capability for Facility

Total Installed Nameplate Capacity (MW)	Manitoba Hydro Power Factor Requirement at POI (MVAR*)
120.45	33 inductive to 49 capacitive

* All MVAR values are at 1.00 p.u. Voltage.

In order to meet the TSIR, the Generator must design the upgraded 120.45 MW St. Leon Wind Facility to provide a total reactive power of 33 MVAR inductive to 49 MVAR capacitive (at 1.00 p.u. voltage) to the Transmission System measured at the POI. As per Section 4.2.1 of the IOA the Generator is responsible for designing and constructing their GIF to meet this requirement. During commissioning the Generator shall indicate to Manitoba Hydro how this requirement will be met prior to Trial Operation.

MH TSIR requires that the Generator to provide voltage control at the Point of Interconnection. ***As per Appendix D Section 3.8.1 of the IOA, Capacitor switching will be automatic in the form of a voltage setpoint which is at the direction of the MH System Operator. This IFS has determined that the preliminary voltage setpoint should be set at 1.04 p.u.***

8.2 Manitoba/US Loop Flow Analysis

To indicate that there is no impact on neighbouring Transmission Systems the change in the Manitoba/USA tie-share after adding the 16.5 MW of generation is calculated for the worst system conditions when MH is exporting 2175 MW.

Table 14: Change in International Tie-line Power Share after Increasing St. Leon Wind Facility Output.

System Condition	G82R (MW)	L20D (MW)	R50M (MW)	D602F (MW)
Pre-Generation	5.9	293.2	148.9	1725.5
Post-Generation	7.2	293.4	148.8	1724.2
PTDF	7.9%	0%	0%	-7.9%

There is no significant change in the MH-US loop flow with the addition of the 16.5 MW of generation at the St. Leon Wind Facility. In general G82R flows south increase and D602F flows decrease by approximately 2 MW.

9 Summary of Interconnection Facilities Study Findings

This section combines the results from all of the technical analysis' outlined in the previous sections, including steady-state, transient stability analysis, short circuit fault levels, power quality and any other analysis performed in response to the Interconnection Request.

The Generator has requested to convert the existing 20.0 MW of ERIS to 16.5 MW of NRIS and achieve a total of 116.4 MW of NRIS and 3.5 MW of ERIS with a maximum Facility output of 119.9 MW (rather than the 116.4 MW output requested) this study identified the following TOIF and ISU are required (based upon the assumptions of Section 3.3:

Table 15: Required Transmission Owner Interconnection Facility Upgrades.

Element	Required Ampacity (A)	Estimate Cost to Generator	Expected In-Service Date
None identified.			

Table 16: Required Interconnection System Upgrades.

Element	Required Ampacity (A)	Estimate Cost to Generator	Expected In-Service Date
None identified.			

Other Requirements

A. ***MH would develop operating requirements pursuant to Appendix D of the IOA indicating under what system conditions the Facility would be permitted to generate the 3.5 MW of ERIS Operating studies would need to be performed in order to identify the service conditions.***

B. This Interconnection Facilities Study has determined that for an expanded Facility with a nameplate capacity of 120.45 MW, the existing Facility and Generator Interconnection Facilities (GIF) will no longer meet the requirements of the MH TSIR, as required by Section 4.1.1 of the Interconnection Operating Agreement (IOA). The following additional requirements must be met:

1. The upgraded 120.45 MW St. Leon Wind Facility must provide a total reactive power capability between 33 MVAR inductive to 49 MVAR capacitive (at 1.00 p.u. voltage). Based on transient stability analysis of Section 5 of this IFS Report the additional capacitive capability can be provided by fixed capacitors. As per Appendix D Section 3.8.1 of the IOA, Automatic Capacitor switching will be at the direction of the MH System Operator, in the form of a voltage setpoint which will be coordinated with the Dorsey 230 kV bus voltage. This study found the voltage setpoint should be 1.04 p.u. The voltage control should be in automatic mode.
2. Monitoring of the expanded Facility must be installed and upgraded as per TSIR Sections 2.12, 3.15, 3.17, 4.13 and 8.0 Figure 2. The following electrical data is required to be monitored:
 - a. Mega-watt and Mega-var output,
 - b. Turbine Status or number of operational turbines,
 - c. Status of circuit breakers on the transformer and shunt compensation devices,
 - d. Tap position of the transformer (voltage regulator set-point and status),
 - e. Bus voltage,

- f. Status and settings including amount(s) and ramp down rate of curtailment schemes.
3. Transient Stability results indicated that the 230 kV bus over-voltage protection (which trips all Facility 34.5 kV capacitor banks) must have its trip delay time reduced to 10 cycles or less.
4. A generic dynamics model for the Facility must be provided. As per Sections 3.29, 4.9 and 4.10 of the TSIR this is a non-proprietary model which can be released to external organizations for joint regional studies.
5. If commissioning tests indicate that current and/or voltage harmonics exceed the Power Quality Specification or if harmonic currents overload capacitor banks connected to the MH transmission network, the Generator will be required to modify its GIF at the direction of MH.

10 References

- [1] Manitoba Hydro Open Access Transmission Tariff, Version 32, Issued by L. Midford, Revised: July 15, 2011, Effective: August 15, 2011.
- [2] Manitoba Hydro Transmission System Interconnection Requirements, Version 3, September 2010.
- [3] “Manitoba Hydro Transfer Capability Methodology for the Planning Horizon”, April 17, 2009.
- [4] North American Electricity Reliability Corporation (NERC) Reliability Standards.
<http://www.nerc.com>
- [5] Manitoba Hydro Interoffice Memorandum, “The Impact of Increased Short Circuit Fault Levels on Local Breakers after the Completion of the [REDACTED] Generation Addition Project _ Supplement to the St. Leon Wind Energy IFS,” April 13, 2012.
- [6] Manitoba Hydro, St. Leon Wind Farm Interconnection Facilities Study, March 2004.
- [7] Interconnection Facility Study Notice; St Leon Station - 6 MW, Energy Resource Interconnection Service application, March 5, 2007
- [8] Manitoba Hydro, Interconnection Evaluation Study Report for [REDACTED] March 1, 2012.
- [9] Manitoba Hydro Transmission Planning & Design Division, System Planning Department Report on Major Transmission Line Capacity Upgrades Part 1, SPD 2008/09.
- [10] Mid-Continent Area Power Pool, “MAPP Members Reliability Criteria and Study Procedures Manual”, Version 1.3, February 2009.

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APPENDIX A

Transmission System Interconnection Requirements (TSIR)

Section 3 of the TSIR document, “Generator Interconnection Requirements”, defines the requirements applicable for generators applying to connect to the 66 kV, 115 kV, 138 kV, 230 kV and 500 kV nominal voltage levels on the MH Interconnected Transmission System. Section 3 of the TSIR states that some of the requirements are to be defined/determined by the Interconnection Studies. Table A.1 below makes reference to these requirements, and provides information for those requirements that were to be determined by Interconnection Studies. All remaining requirements not to be determined by the Interconnection Studies are defined in the MH document.

Table A.1. Section 3 Interconnection Requirements to be determined by Interconnection Studies.

No.	Item	Requirement
3.1	Interconnection Location and Voltage Level	Section: 3.2 Electrical Configuration
3.2	Sealing of Technical Reports, Drawings, Memos, etc.	APEGM Requirement.
3.3	Operating Procedures	Developed by MH for the I.O.A.
3.4	Reactive Power Requirements	Section: 8.1
3.5	Dynamic Power Requirements	Section: 8.1
3.6	Voltage Variations	Section: 5
3.7	Frequency Variations	Section: 5
3.8	Inertia Constant (H)	Not applicable for this interconnection.
3.9	Synchronous Generator Controls	Not applicable for this interconnection.
3.10	Synchronizing Facilities	No changes to existing Facility Requirements.
3.11	Special Protection Systems (SPS) or Remedial Action Schemes (RAS)	No changes to existing Facility: Anti-66kV System Islanding Scheme 230 kV Over-voltage Protection
3.12	Black Start Capability	Not applicable for this interconnection.
3.13	Power Quality	
3.13.1	Power Quality	Section: 7
3.13.2	Resonance and Self-Excitation	Generator Requirement covered in IOA (Facility Design Report)
3.14	Protection Requirements	Generator Requirement covered in IOA (Protection Coordination Report)
3.15	Communications	Generator Requirement covered in IOA (MH Commissioning Check)
3.16	Revenue Metering	Generator Requirement covered in IOA (MH Commissioning Check)
3.17	Telemetry, Metering, and Supervisory Control and Data Acquisition (SCADA)	Generator Requirement covered in IOA (MH Commissioning Check)
3.18	Disturbance Monitoring	Generator Requirement covered in IOA (MH Commissioning Check)
3.19	Insulation Levels	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or

		the MH Commissioning Check)
3.20	Short Circuit Levels	Section: 6 for the Transmission System. Generator Requirement covered in IOA (MH Commissioning Check)
3.21	Grounding	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.22	Lightning (Surge) Protection	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.23	Safety	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.24	Design Standards	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.25	Environmental Conditions	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.26	Clearances and Access	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.27	Isolation	Generator Requirement covered in IOA (The Manitoba Electrical Inspector Check)
3.28	Transformer Connection.	Generator Requirement covered in IOA (Either the Manitoba Electrical Inspector or the MH Commissioning Check)
3.29	Modelling Data and Special Tests	Generator Requirement covered in IOA (System Planning and MH Commissioning Check)
3.30	Testing and Maintenance Coordination	Generator Requirement covered in IOA (System Planning and MH Commissioning Check)
3.31	Inspection Requirements	Generator Requirement covered in IOA
3.32	Coordinated Joint Studies	Generator Requirement covered in IOA
3.33	Notification of New or Modified Facilities	Generator Requirement covered in IOA
3.34	Special Interconnection Requirements	Generator Requirement identified in the IFS and Operating Studies.
3.35	Generation Forecasting	Generator Requirement covered in IOA

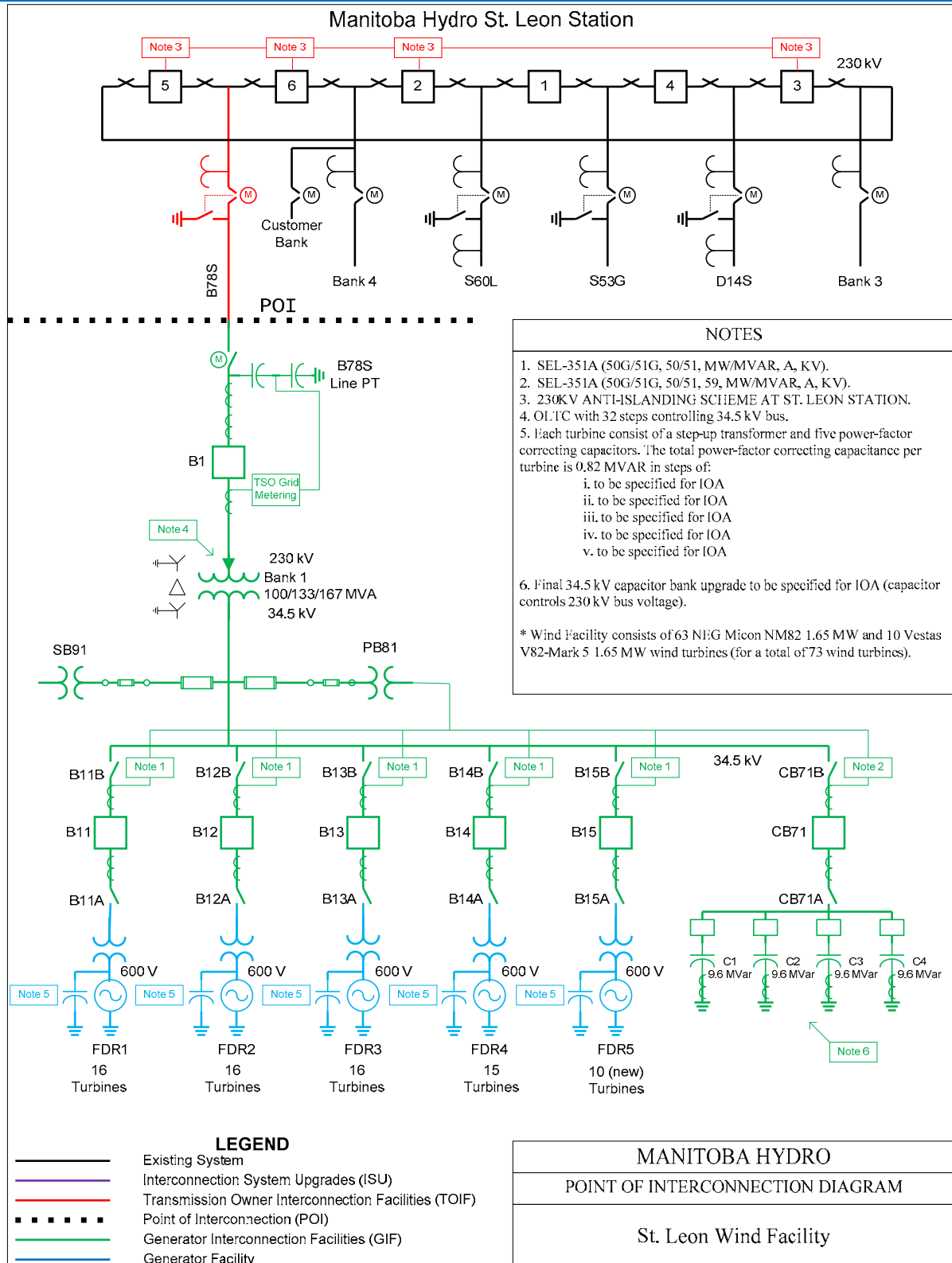
Table A.2. Section 4 Interconnection Requirements to be determined by Interconnection Studies.

No.	Item	Requirement
4.1	Voltage Tolerance	Section: 5
4.2	Frequency Tolerance	Section: 5
4.3	Power Control	Generator Requirement covered in IOA Commissioning tests required.
4.4	Reactive Power Capability/Control	Section 8.1.
4.5	Induction Generator Controls	
4.5.1	Voltage Regulation	Voltage Control at POI Required. Section 8.1.
4.5.2	Frequency Response	Generator Requirement covered in IOA Commissioning or Manufacture type tests required.
4.5.3	Power Ramp Rates	Generator Requirement covered in IOA Commissioning tests required.
4.5.4	Other Controls	None required.
4.6	Low Voltage Ride Through	Section: 5.4.1. Generator Requirement covered in IOA Commissioning or Manufacture type tests required.
4.7	Post Disturbance Recovery	Section: 5.
4.8	Synchronizing Facilities	Generator Requirement covered in IOA
4.9	Modelling Data	Generator Requirement covered in IOA
4.10	Modelling Data Verification	Generator Requirement covered in IOA
4.11	Special Commissioning Tests	Commissioning Requirement IOA Requirement.
4.12	Power Quality	Section: 7 Generator Requirement covered in IOA Measured during commissioning
4.13	Operational Monitoring and Wind Data	Generator Requirement covered in IOA (MH Commissioning Check)
4.14	Protective Equipment and Relaying System Requirements	Anti-islanding scheme required. (MH Commissioning Check)
4.15	Clearances and Access	Generator Requirement covered in IOA (The Manitoba Electrical Inspector Check)
4.16	Underground Cables	Generator Requirement covered in IOA (The Manitoba Electrical Inspector Check)
4.17	Generator Tapping	Not applicable for this interconnection.

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APPENDIX B

Point of Interconnection (P.O.I.) Drawings



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APPENDIX C

Generator Unit Interconnection Facilities Study Models

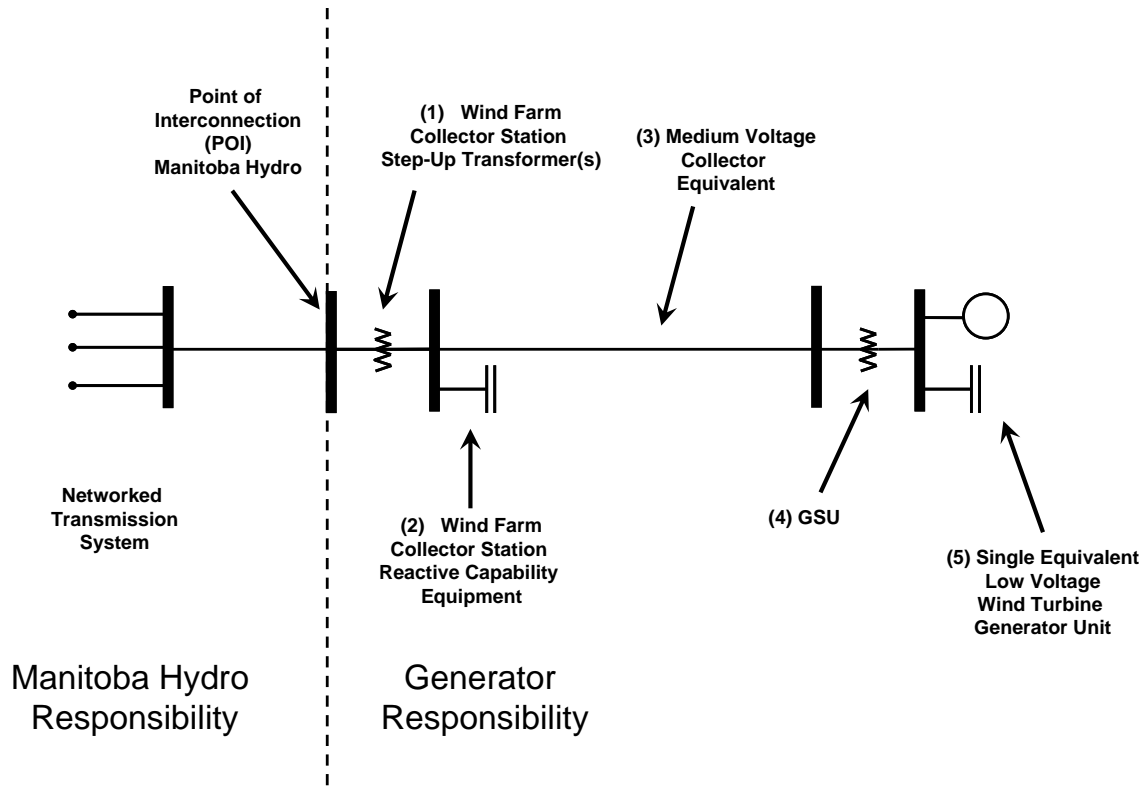
The equivalent Facility model is the responsibility of the Generator under NERC Standard MOD-010, MOD-011, and MOD-012.

In general two models are to be submitted:

1. Detailed model used for the Interconnection Studies. Typically this model is proprietary and Manitoba Hydro will sign all necessary Non-Disclosure Agreements to use this model in Facility Studies.
2. Generic model for seasonal operating studies. This model cannot be proprietary as it will be released to any external entities involved in studies on the networked transmission system.

The generic model must be benchmarked against the detailed model for accuracy. The detailed model must be benchmarked against the actual Facility performance.

The figure below illustrates the equivalent model for the St. Leon Wind Facility as provided by the Generator. If the final model specifications for the Facility are significantly different than those listed below, a re-study may be required.



1. Facility Collector Station Step Up Transformer:

Type	3-phase	
Base MVA	167 MVA	
Connection Data		
Primary	230 kV _{LL} Grounded Y	
Secondary	34.5 kV _{LL} Grounded Y	
Terteritary	Buried Delta	
% Impedance	14%	
R/X ratio	0.027	
Impedance Data		
	Ω/phase (primary)	P.U. (on 100 MVA Base)
R (Resistance)	unknown	0.002300
X (Reactance)	unknown	0.085000
Tap Data		
Number of Tap Positions	5 (nominal/±2.5%/±5.0%)	
Tap Location	Primary (230 kV _{LL})	
Tap Position	P.U.	kV_{LL}
1	1.10000	253.00
2	1.09375	251.56
3	1.08750	250.13
4	1.08125	248.69
5	1.07500	247.25
6	1.06875	245.81
7	1.06250	244.38
8	1.05625	242.94
9	1.05000	241.50
10	1.04375	240.06
11	1.03750	238.63
12	1.03125	237.19
13	1.02500	235.75
14	1.01875	234.31
15	1.01250	232.88
16	1.00625	231.44
17	1.00000	230.00
18	0.99375	228.56
19	0.98750	227.13
20	0.98125	225.69
21	0.97500	224.25
22	0.96875	222.81
23	0.96250	221.38
24	0.95625	219.94
25	0.95000	218.50
26	0.94375	217.06
27	0.93750	215.63
28	0.93125	214.19

29	0.92500	212.75
30	0.91875	211.31
31	0.91250	209.87
32	0.90625	208.44
33	0.90000	207.00
Tap Control Mode	Auto (OLTC)	
Control Settings (if automatic)	Controls the 34.5 kV bus between: Minimum: 0.933 Maximum 1.037	
Normal Operating Tap	0.99375 p.u.	
Saturation Data		
Saturation Curve	Unknown	

2. Facility Collector Station Reactive Capability Equipment:

Type	Capacitor Bank
Requirement	Steady State
Dynamic Model Required	No
Block Data	
Number of Capacitor Blocks	4
Total	38.4 (57.6)**MVAR
Size per Block*	9.6 (14.4) MVAR
1	9.6 (14.4) MVAR
2	9.6 (14.4) MVAR
3	9.6 (14.4) MVAR
4	9.6 (14.4) MVAR
Switching Data	
Controlled Bus	230 kV
Bus Location	34.5 kV
Switching Modes	Manual & Automatic
Normal Operating Mode	Automatic
Automatic Switch-In Logic	<ul style="list-style-type: none"> • Insert 1: $V \leq 1.03$ p.u. • Insert 2: $V \leq 1.00$ p.u.
Automatic Switch-Out Logic	<ul style="list-style-type: none"> • Trip 2: $V \geq 1.08$ p.u. • Trip 1: $V \geq 1.05$ p.u.
Additional Comments	
*Only 3 capacitors can be switch in at any given time as the fourth capacitor bank is there to meet MH TSIR for availability (4 th block replaces rapid discharge circuitry).	
**Value in brackets is the proposed values to accommodate the 120.45 MW Facility.	

3. Facility Medium Voltage Collector Equivalent:

Base Voltage	34.5 kV _{LL}	
Impedance Data		
	Ω/phase	P.U. (on 100 MVA Base)
R (Resistance)		0.008918 (0.0084208)*
X (Reactance)		0.01240 (0.0111463)
bC (Charging)		0.073611 (0.090701)
*Value in brackets is the new values of the 120.45 MW Facility.		

4. Generator Station Unit Step Up Transformer:

Type	3-phase	
Base MVA	1.7 MVA	
Connection Data		
Primary	34.5 kV _{LL} Delta	
Secondary	0.60 kV _{LL} Grounded Y	
Tertiary	N.A.	
% Impedance	7%	
R/X ratio		
Impedance Data (single unit)		
	Ω/phase (primary)	P.U. (on 100 MVA Base)
R (Resistance)	-	-
X (Reactance)	49	4.12
Tap Data		
Number of Tap Positions	5 (nominal/±2.5%)	
Tap Location	Primary (35.0 kV _{LL})	
Tap Position	P.U.	kV_{LL}
1	1.05	36.75
2	1.025	35.88
3	1.00	35.00
4	0.975	34.13
5	0.95	33.25
Tap Control Mode	Fixed	
Control Settings (if automatic)	Not Applicable	
Normal Operating Tap	Nominal (1.00 p.u.)	
Saturation Data		
Saturation Curve	Not Required	
Additional Comments		
Modelled in PSS/E as a single 124.1 MVA 0.6/34.5 kV transformer with R = 0.0 p.u. X = 0.07 p.u. (124.1 MVA base).		

5. Wind Turbine:

Turbine	Vestas V82 Mark 5										
Turbine Technology	Induction										
Turbine MBase	1.808 MVA										
Number of Turbines in Facility	63 (+ 10 new)										
Base Voltage	0.60 kV _{LL}										
Rated Output	1.65 MW										
Rsource	0.00083 Ω										
Xsource	0.0314 Ω										
Reactive Range at Rated Output and Turbine Base Voltage	<p>0.750 MVAR total per turbine in 5 steps:</p> <ol style="list-style-type: none"> 1. 0.25 MVAR 2. 0.20 MVAR 3. 0.15 MVAR 4. 0.10 MVAR 5. 0.05 MVAR <p>(@ 1.00 p.u. terminal voltage)</p>										
Low Voltage Tolerance	<p>Advanced Grid Option Enabled:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Voltage Limit (p.u.)</th> <th>Timeout (seconds)</th> </tr> </thead> <tbody> <tr> <td>< 0.15</td> <td>0.150</td> </tr> <tr> <td>= 0.15</td> <td>0.684</td> </tr> <tr> <td>0.15 to 0.80</td> <td>3.0</td> </tr> <tr> <td>0.80 to 0.90</td> <td>5.0</td> </tr> </tbody> </table> <p>Measured at 600 V turbine terminal</p>	Voltage Limit (p.u.)	Timeout (seconds)	< 0.15	0.150	= 0.15	0.684	0.15 to 0.80	3.0	0.80 to 0.90	5.0
Voltage Limit (p.u.)	Timeout (seconds)										
< 0.15	0.150										
= 0.15	0.684										
0.15 to 0.80	3.0										
0.80 to 0.90	5.0										
High Voltage Tolerance	<p>Standard Settings:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Voltage Limit (p.u.)</th> <th>Timeout (seconds)</th> </tr> </thead> <tbody> <tr> <td>> 1.10</td> <td>60.0</td> </tr> <tr> <td>> 1.125</td> <td>0.100</td> </tr> </tbody> </table> <p>Measured at 600 V turbine terminal</p>	Voltage Limit (p.u.)	Timeout (seconds)	> 1.10	60.0	> 1.125	0.100				
Voltage Limit (p.u.)	Timeout (seconds)										
> 1.10	60.0										
> 1.125	0.100										
Low Frequency Tolerance	Trips if turbine terminal frequency < 57 Hz for 100 ms.										
High Frequency Tolerance	Trips if turbine terminal frequency > 61.5 Hz for 100 ms.										
Ramp-UP Rate	Required at Commissioning										
Curtaiment Rate	Required at Commissioning										
Operating Temperature Range	Required at Commissioning										
Operating Wind Speed Range	Required at Commissioning										
Turbine Capability Curve	Consumes 740 kVar at rated output.										
Manufacture Type Tests	Required at Commissioning										
Dynamics Model	VestasV82_PSSE30.LIB Generic model not provided.										
Additional Comments											
<p>Equivalent model in PSS/E:</p> <ul style="list-style-type: none"> • MBase = 131.47 MVA • PMAX = 120.45 MW 											

- $Q_{MAX} = Q_{MIN} = Q_{GEN}$
- $X_{source} = 0.158$ p.u. (not scaled by number of turbine units)
- $R_{source} = 0.0042$ p.u. (not scaled by number of turbine units)

6. All unique protection scheme settings which may trip the Facility or turbines due to

- a. Protection Logic will trip the Facility (to prevent islanding generation onto local load) if the St. Leon Ring becomes simultaneously opened at positions R2 & R3, R3 & R5 and R3 & R6.
- b. The Facility can provide voltage control at the 230 kV P.O.I . by adjusting the wind turbine's power factor with a minimum response time of 15 seconds.
- c. All turbine power factor correcting capacitors will be tripped with a trip of the wind turbine.
- d. An over-voltage relay with a 5 second time delay (can be reduced to a few cycles) will trip all Facility capacitors if the 230 kV POI voltage exceeds 1.10 p.u. (this relay can also respond to a telemetry signal from the Facility or from Manitoba Hydro).Low and High voltage ride-through capabilities

The IDEV used to add the new St. Leon Wind Facility is as follows:

```
=====
text: Add the St Leon Wind farm as per the Customers Data
text: Expanded wind farm of 73 turbines at 1.65 MW Total of 120.45 MW
text: SJS March 24, 2012

rdch
1
667088,'ST-LEON C ', 34.5000,1, 0.000, 0.000, 667, 703, , , 668
669103,'STLEON 9 ', 34.5000,1, 0.000, 0.000, 667, 703, , , 668
669830,'STLEONWG ', 0.6000,2, 0.000, 0.000, 667, 703, , , 668
0 / END OF BUS DATA, BEGIN LOAD DATA
0 / END OF LOAD DATA, BEGIN GENERATOR DATA
669830,'1 ', 120.45, -53.960, -53.960, -53.960,1.00000, 0, 131.984, 0.00420,
0.15800, 0.00000, 0.00000,1.00000,1, 100.0, 120.45, 0.000, 721,1.0000
0 / END OF GENERATOR DATA, BEGIN BRANCH DATA
667088, 669103,'1 ', 0.0084209, 0.0111463, 0.090701, 0.00, 0.00, 0.00,
0.00000, 0.00000, 0.00000, 0.00000,1, 0.00, 1,1.0000
0 / END OF BRANCH DATA, BEGIN TRANSFORMER DATA
667051,667088, 0,'1 ',1,1,1, 0.00000, 0.00000,2,' ',1, 1,1.0000
0.00000, 0.08400, 100.00
1.05625, 0.000, 0.000, 167.00, 167.00, 167.00, 1, 667088, 1.10000, 0.90000,
1.01250, 0.98750, 33, 0, 0.00000, 0.00000
1.00000, 0.000
669103,669830, 0,'1 ',1,2,1, 0.00000, 0.00000,2,' ',1, 1,1.0000
0.00000, 0.0700, 124.10
1.0000, 0.000, 0.000, 124.10, 124.10, 124.10, 0, 0, 1.05000, 0.95000, 1.05000,
0.95000, 5, 0, 0.00000, 0.00000
1.00000, 0.000
0 / END OF TRANSFORMER DATA, BEGIN AREA DATA
0 / END OF AREA DATA, BEGIN TWO-TERMINAL DC DATA
0 / END OF TWO-TERMINAL DC DATA, BEGIN VSC DC LINE DATA
0 / END OF VSC DC LINE DATA, BEGIN SWITCHED SHUNT DATA
667088,1,1.04500,1.04000,667051, 100.0,' ', 43.2, 3, 14.4
669830,0,1.00000,1.00000, 0, 100.0,' ', 54.76, 1, 18.25, 1, 14.60, 1,
10.95, 1, 7.30, 1, 3.65
0 / END OF SWITCHED SHUNT DATA, BEGIN IMPEDANCE CORRECTION DATA
0 / END OF IMPEDANCE CORRECTION DATA, BEGIN MULTI-TERMINAL DC DATA
0 / END OF MULTI-TERMINAL DC DATA, BEGIN MULTI-SECTION LINE DATA
0 / END OF MULTI-SECTION LINE DATA, BEGIN ZONE DATA
0 / END OF ZONE DATA, BEGIN INTER-AREA TRANSFER DATA
0 / END OF INTER-AREA TRANSFER DATA, BEGIN OWNER DATA
0 / END OF OWNER DATA, BEGIN FACTS DEVICE DATA
0 / END OF FACTS DEVICE DATA
=====
```


The DYRE add file used to add the new St. Leon Wind Facility is as follows:

```
=====
/*****
/
/   MODULE: Vestas V82 Dynamic Model Data for the
/   St. Leon Wind Farm as provided by the Generator.
/   SJShelemy
/   September 28, 2011
/   Model version 1.2
/
/*****

669830 'USRMDL' '1' ' ' 'VWCOR2' 1 1 2 25 8 29 1 0
1808.0000 600.0000 0.0008333 0.7957 0.0314 1.0691 3.0
1650.0000 0 1 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000/
0 'USRMDL' 0 'VWVAR2' 8 0 2 0 0 19 669830 '1' /
0 'USRMDL' 0 'VWDRT2' 8 0 3 21 5 10 669830 '1' 1
9.2643 1.6270 0.8489 1.0944 3.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000/
0 'USRMDL' 0 'VWTUR2' 8 0 3 21 2 5 669830 '1' 0
41.0000 1.2200 1.0000 11.2500 12.0 84.2400 3.0000
1650.0000 0.0500 0.1000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000/
0 'USRMDL' 0 'VWCTR2' 8 0 2 13 13 30 669830 '1'
1.0000 0.0150 0.5800 0.0500 0.1000 0.0400 3.0000 0.0400
1.6500 -0.5000 -95.0000 1250.0000 1808.0000/
0 'USRMDL' 0 'VWPAC2' 8 0 2 7 3 18 669830 '1'
-95.0000 -0.5000 15.0000 -15.0000 0.0900 0.1000 0.0000/
0 'USRMDL' 0 'VWVPR2' 0 2 7 20 0 11
669830 '1' 1 1 0 0 0
0.0000 0.1500 0.8500 0.1000 0.9000 60.0000
1.1000 60.0000 1.1250 0.1000 1.2000 0.1500
0.1500 0.1500 0.1500 0.6840 0.8000 3.0000 0.9000 5.0000/
0 'USRMDL' 0 'VWFPR2' 0 2 3 4 0 1 669830 '1' 0 57.0000 0.2000 61.5000 0.2000/
```

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APPENDIX D

Detailed Cost and Schedule Estimates

This Interconnection Facilities Study did not identify any new Transmission Owner Interconnection Facilities (TOIF). Some existing thermal overloads are exacerbated by the increase in generation output from the St. Leon Wind Facility. These are identified as Interconnection System Upgrades (ISU) that must be constructed pursuant to higher queued Interconnection Requests and future transmission expansion plans of Manitoba Hydro. Detailed cost and schedule estimates for these external projects are not included.

Table 17: Required Transmission Owner Interconnection Facility Upgrades.

Element	Required Ampacity (A)	Estimated Cost to Generator	Expected In-Service Date
None identified.			

10.1.1.1 Interconnection System Upgrades

Table 5 lists the Transmission Owner Interconnection Facilities required to grant the Interconnection Service requested:

Table 18: Required Interconnection System Upgrades.

Element	Required Ampacity (A)	Estimated Cost to Generator	Expected In-Service Date
None identified.			

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APPENDIX E

Powerflow Summary Plots

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Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 3439.4
 Total Load: 3180.8
 Total Loss: 95.2
 Total Expt: 163.5
 Indus Load: 1010.2

MH to SPC Total: -0.4
 IslandFallsLOOP: -53.0
 MH to SPC (230): 52.6

Boundary_Dam: 872.0/ 875.0
 Poplar_River: 615.3/ 630.0
 REDUC: 10.3/ 26.4
 SHAND: 298.0/ 305.0
 EB_Campbell: 210.0/ 290.0
 Queen_Elizabeth: 441.0/ 504.6
 Corus: 215.9/ 278.0
 Nipawin: 249.2/ 255.0
 Island_Falls: 87.0/ 101.0
 Meridian: 197.4/ 235.0
 Coteau_Creek: 146.4/ 183.0
 ERMIN: 0.0/ 94.0
 Lands: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 58.4/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 28.7/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.5/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 195.8
 Total Loss: 7.1
 Total Expt: 248.7
 Indus Load: 127.9

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 335.6
 Total Loss: 50.7
 Total Expt: 261.6
 Indus Load: 136.7

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -230.0
 QMAX: 195.9
 QGEN: -15.2
 MARG: -214.8 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 25.0
 MARG: 143.0 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: 0.1
 MARG: 94.9 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: 0.1
 MARG: 149.9 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 1302.3
 MARG: 397.7 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.2
 Dorsey230 MVAR: 755.6
 Handey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon94 MVAR: 0.0

Manitoba (667)

Avail Gens: 6149.0
 Total Gens: 5378.3
 Total Load: 3350.1
 Total Loss: 352.1
 Total Expt: 1676.2
 Indus Load: 641.8

NDC_to_NAC: 0.0
 NDC_to_WPG: 3429.4
 NAC_to_WES: 248.7
 WES_to_WPG: 510.7
 WAV_to_WPG: 293.4

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 1297.1/ 1388.7
 Long_Spruce: 994.6/ 1030.6
 Kettle: 1155.6/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 89.6
 Great_Falls: 136.3/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 99.0/ 99.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 1524.0
 Bipole2: 1726.0
 Bipole3: 0.0
 MHEX: 1457.3

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 3447.2
 Total Load: 0.0
 Total Loss: 17.5
 Total Expt: 3429.4
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27544.5
 Total Load: 28003.7
 Total Loss: 747.1
 Total Expt: -1276.5

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 50.5
 Total Expt: 145.6

MH to ONT Total: 219.2
 East West Ties: -192.5

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DAYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Day_Pulp: 0.0/ 0.0
 Lakeshead: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhites: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valerie_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 594.6
 Total Load: 67.9
 Total Loss: 14.1
 Total Expt: 512.6
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 2750.5
 Total Loss: 262.6
 Total Expt: 2776.2
 Indus Load: 377.3

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 7457.8
 Total Load: 3805.4
 Total Loss: 362.6
 Total Expt: 3288.4
 Indus Load: 0.0

ND Coal Fields (711):
 Avail Gens: 6456.6
 Total Gens: 6045.5
 Total Load: 1688.1
 Total Loss: 198.8
 Total Expt: 4158.2
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 186.2
 Total Load: 784.9
 Total Loss: 33.7
 Total Expt: -632.5
 Indus Load: 0.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 1226.1
 Total Load: 1332.4
 Total Loss: 130.1
 Total Expt: -237.3
 Indus Load: 0.0

NDEX_AC: 1670.2
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: 175.0

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -87.0
 QMAX: 125.8
 QGEN: 50.7
 MARG: 75.1 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 160.0
 ShayenneSW MVAR: 160.0
 Ramsey230 MVAR: 60.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2242.7/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcom: 35.2/ 35.2
 Connell: 31.3/ 30.5
 JimFalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 489.2/ 489.2
 InverFalls: 250.0/ 300.0
 White: 318.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 1.7/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 GND: 25.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 406.0/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 0.0/ 7.0
 BR13: 54.9/ 287.5
 CH83: 23.1/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 30.7/ 60.0
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Hart_ST: 26.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearht: 0.0/ 8.2
 BigFalls: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newell: 0.0/ 8.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MWEX: 1053.2
 MWSI: 898.0
 TCEX: 577.6

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1229.4
 Total Load: 1658.1
 Total Loss: 81.3
 Total Expt: -510.5
 Indus Load: 894.4

Minn Wiscon (725)

Avail Gens: 15421.3
 Total Gens: 11343.8
 Total Load: 13202.9
 Total Loss: 406.5
 Total Expt: -2272.9

Twin Cities (725):
 Avail Gens: 1325.1
 Total Gens: 10114.4
 Total Load: 11544.8
 Total Loss: 325.2
 Total Expt: -1762.4
 Indus Load: 291.6

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 191.7
 MARG: 208.3 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1240.0/ 1240.0
 Coote: 453.0/ 453.0
 Garrison: 480.0/ 480.0
 Hesket: 111.7/ 111.7
 Leland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 149.1/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 52.5/ 52.5
 Hetland: 0.0/ 25.2
 Solway: 96.2/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peak: 108.0/ 108.0
 Rugby_Mind: 70.0/ 150.0
 G904: 60.0/ 151.8
 Langdon_Mind: 90.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 12.0/ 12.0
 MapleRiverND: 2.0/ 2.0
 Diver_Mind: 50.6/ 100.1
 Bison_Mind: 75.0/ 75.0
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 30.0/ 30.0
 CedarHillMND: 19.5/ 19.5
 Tatanka_MND: 179.5/ 180.0
 Culbertson: 127.5/ 127.5
 Pomes: 40.0/ 40.0
 Ecklund: 99.0/ 99.0
 NordPrairieND: 503.4/ 540.5
 FibroMinn: 50.0/ 50.0
 Edgely: 100.7/ 100.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 597.2/ 597.2
 Luverne: 91.0/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLRUST: 0.0/ 9.0
 HPS: 1.5/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 GDXX4: -30.0/ 40.0
 NBGS: 22.5/ 22.5
 Baldwin: 30.0/ 30.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 186.2
 Total Load: 784.9
 Total Loss: 33.7
 Total Expt: -632.5
 Indus Load: 0.0

NDEX_AC: 1670.2
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: 175.0

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -87.0
 QMAX: 125.8
 QGEN: 50.7
 MARG: 75.1 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 160.0
 ShayenneSW MVAR: 160.0
 Ramsey230 MVAR: 60.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2242.7/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcom: 35.2/ 35.2
 Connell: 31.3/ 30.5
 JimFalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 489.2/ 489.2
 InverFalls: 250.0/ 300.0
 White: 318.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 1.7/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 GND: 25.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 406.0/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 0.0/ 7.0
 BR13: 54.9/ 287.5
 CH83: 23.1/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 30.7/ 60.0
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Hart_ST: 26.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearht: 0.0/ 8.2
 BigFalls: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newell: 0.0/ 8.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MWEX: 1053.2
 MWSI: 898.0
 TCEX: 577.6

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1229.4
 Total Load: 1658.1
 Total Loss: 81.3
 Total Expt: -510.5
 Indus Load: 894.4

Minn Wiscon (725):
 Avail Gens: 15421.3
 Total Gens: 11343.8
 Total Load: 13202.9
 Total Loss: 406.5
 Total Expt: -2272.9

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 191.7
 MARG: 208.3 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2242.7/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcom: 35.2/ 35.2
 Connell: 31.3/ 30.5
 JimFalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 489.2/ 489.2
 InverFalls: 250.0/ 300.0
 White: 318.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 1.7/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 GND: 25.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 406.0/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 0.0/ 7.0
 BR13: 54.9/ 287.5
 CH83: 23.1/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 30.7/ 60.0
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Hart_ST: 26.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearht: 0.0/ 8.2
 BigFalls: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newell: 0.0/ 8.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MWEX: 1053.2
 MWSI: 898.0
 TCEX: 577.6

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1229.4
 Total Load: 1658.1
 Total Loss: 81.3
 Total Expt: -510.5
 Indus Load: 894.4

Minn Wiscon (725):
 Avail Gens: 15421.3
 Total Gens: 11343.8
 Total Load: 13202.9
 Total Loss: 406.5
 Total Expt: -2272.9

Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 3095.9
 Total Load: 3169.8
 Total Loss: 90.4
 Total Expt: -164.4
 Indus Load: 1010.2

MH to SPC Total: 0.2
 IslandFallsLOOP: -54.9
 MH to SPC (230): 55.1

Boundary_Dam: 649.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 195.4/ 290.0
 Queen_Elizbt: 290.0/ 504.6
 Corus: 232.0/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 202.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 598.0
 Total Gens: 367.0
 Total Load: 190.0
 Total Loss: 6.8
 Total Expt: 170.2
 Indus Load: 124.1

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 407.6
 Total Load: 363.8
 Total Loss: 22.5
 Total Expt: 21.3
 Indus Load: 132.7

Grand_Rapids MVAR:
 4 of 4 machines
 QMIN: -230.0
 QMAX: 195.9
 QGEN: -120.0
 MARG: -109.9 (Out:0.0)

7_Sisters MVAR:
 5 of 6 machines
 QMIN: -132.0
 QMAX: 150.0
 QGEN: -72.0
 MARG: -59.4 (Out:32.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 QMIN: -50.0
 QMAX: 95.0
 QGEN: 0.0
 MARG: 95.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 QMIN: -20.0
 QMAX: 150.0
 QGEN: 0.0
 MARG: 150.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 QMIN: -895.0
 QMAX: 1700.0
 QGEN: 126.3
 MARG: 1573.7 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 QMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.2
 Dorsey230 MVAR: 355.0
 Handey230 MVAR: 229.3
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6149.0
 Total Gens: 2665.6
 Total Load: 3350.0
 Total Loss: 133.9
 Total Expt: -818.3
 Indus Load: 695.2

NDC_to_NAC: 0.0
 NDC_to_WPG: 1429.2
 NAC_to_WES: 170.2
 WES_to_WPG: 191.3
 WAV_to_WPG: 200.8

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 512.7/ 1319.7
 Long_Spruce: 415.1/ 1030.6
 Kettle: 475.2/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 115.7/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 239.6/ 479.9
 Pine_Falls: 28.0/ 89.6
 Great_Falls: 44.0/ 136.8
 McArthur: 20.5/ 56.5
 PointeDuBois: 37.0/ 78.8
 Pine_Falls: 39.0/ 68.0
 7_Sisters: 57.5/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 99.0/ 99.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 656.0
 Bipole2: 742.0
 Bipole3: 0.0
 MHX: -694.1

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 1434.0
 Total Load: 0.3
 Total Loss: 4.6
 Total Expt: 1429.2
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27544.5
 Total Load: 28003.7
 Total Loss: 719.2
 Total Expt: -1248.9

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 36.5
 Total Expt: 159.4

MH to ONT Total: -124.4
 East West Ties: -113.2

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeshead: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_FLS: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_FLS: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 220.0
 Total Load: 138.0
 Total Loss: 5.5
 Total Expt: 76.4
 Indus Load: 72.1

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 2657.8
 Total Loss: 94.5
 Total Expt: -2515.4
 Indus Load: 366.2

ND Coal Fields (711):

Antelope: 960.0/ 960.0
 Coal_Creek: 1290.0/ 1290.0
 Coquette: 453.0/ 453.0
 Garrison: 480.0/ 480.0
 Heskett: 111.7/ 111.7
 Leland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 149.1/ 149.1
 Williston: 0.0/ 0.0
 Jamesstown: 52.5/ 52.5
 Hetland: 25.0/ 25.2
 Solway: 78.5/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 108.0/ 108.0
 Rugby_Mind: 150.0/ 150.0
 G904: 151.8/ 151.8
 Langdon_Mind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 12.0/ 12.0
 MapleRiverND: 2.0/ 2.0
 Bison_Mind: 50.6/ 100.1
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 30.0/ 30.0
 CedarHillMIND: 19.5/ 19.5
 Tatanka_MND: 180.0/ 180.0
 Culbertson: 127.5/ 127.5
 Ponoma: 40.0/ 40.0
 Ecklund: 99.0/ 99.0
 NordPrairieND: 115.5/ 115.5
 FibroMinn: 50.0/ 50.0
 Edgely: 100.7/ 100.7
 ElbowLake: 21.0/ 21.0
 Ashtabula: 597.2/ 597.2
 Luverne: 91.0/ 91.0
 Frairie: 4.0/ 4.0
 AlexPDM: 0.0/ 7.8
 DLUDS1: 0.0/ 9.0
 WPS: 1.5/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 DGCX4: -30.0/ 40.0
 NBGS: 22.5/ 22.5
 Baldwin: 39.0/ 39.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

Avail Gens: 6456.6
 Total Gens: 6217.8
 Total Load: 1688.1
 Total Loss: 213.7
 Total Expt: 4315.5
 Indus Load: 0.0

ND Red Avr Vly (710):

Avail Gens: 403.7
 Total Gens: 257.0
 Total Load: 784.9
 Total Loss: 40.0
 Total Expt: -568.0
 Indus Load: 0.0

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 7746.3
 Total Load: 3805.4
 Total Loss: 373.7
 Total Expt: 3565.8
 Indus Load: 0.0

NDEX_AC: 1947.6

CUDC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: 167.5

Fargo_SVC MVAR:
 0 of 1 machines
 QMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 QMIN: -87.0
 QMAX: 125.8
 QGEN: -39.7
 MARG: -47.3 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 200.0
 ShayneSW MVAR: 120.0
 Ramsey230 MVAR: 60.0

ND Southeastrn (712):

Avail Gens: 1311.3
 Total Gens: 1271.5
 Total Load: 1332.4
 Total Loss: 120.0
 Total Expt: -181.7
 Indus Load: 0.0

Montecello: 619.1/ 568.0
 PrairieIsInd: 1138.0/ 1044.0
 King: 605.0/ 555.0
 Sherco: 2444.6/ 2291.0
 French_IsInd: 30.5/ 28.0
 Red_Wing: 24.4/ 22.4
 Hilsman: 24.0/ 22.0
 Holcomber: 38.4/ 35.2
 Cornell: 34.1/ 30.5
 Jivefalls: 61.6/ 56.3
 Riverside: 163.8/ 150.3
 Black_Dog: 598.0/ 548.6
 BFTG: 24.3/ 22.3
 LSP_CT: 173.3/ 177.3
 LSSTeam: 115.8/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 533.2/ 489.2
 Jivefalls: 272.5/ 300.0
 White: 346.6/ 322.0
 WhiteG: 0.9/ 0.9
 Fenton: 74.1/ 136.0
 STP_Co: 27.3/ 25.0
 BFT: 55.2/ 50.5
 MEC: 382.6/ 372.0
 GHH: 8.1/ 8.3
 HESTPIP: 1.9/ 1.7
 FEP: 163.5/ 150.0
 Janesville: 0.0/ 5.0
 FLYCLD: 5.0/ 4.6
 BLSBY: 2.6/ 2.4
 KEYCT: 36.0/ 32.4
 Hridge: 1.6/ 7.3
 ERIDGE: 2.2/ 10.0
 Colvill: 389.1/ 357.0
 HBR: 664.9/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 442.5/ 406.2
 RiverFalls: 13.1/ 20.0
 Sridge: 1.2/ 5.4
 G176: 0.5/ 16.0
 BR13: 59.8/ 287.5
 CHB3: 25.2/ 281.1
 GRNDMDH: 109.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 IULK: 1.0/ 5.0
 FEP-ST: 109.0/ 100.0
 Grant_City: 33.5/ 60.5
 HERC: 36.7/ 33.7
 STCloud: 7.3/ 6.7
 Hart_ST: 26.3/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearht: 0.0/ 8.2
 RFBell: 8.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 3.4

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 2657.8
 Total Loss: 94.5
 Total Expt: -2515.4
 Indus Load: 366.2

NOT FOUND

Lept-Akly: 5. MW
 Raud-Hubd: 122. MW
 Inmn-WngR: 48. MW
 Alax-Dgls: 12. MW
 GLCH-WILM: 21. MW
 Kerk-kart: 7. MW
 Mors-Gnrf: 8. MW
 Canb-Gnrf: 34. MW

Minnesota Pwr (720):

Avail Gens: 2096.2
 Total Gens: 1229.4
 Total Load: 1658.1
 Total Loss: 11.3
 Total Expt: -500.5
 Indus Load: 894.4

MWEX: 678.5
 MWSI: 527.9
 TCEX: -111.1

Minn Wiscon (725)

Avail Gens: 15421.3
 Total Gens: 12930.4
 Total Load: 13202.9
 Total Loss: 347.7
 Total Expt: -619.6

Twin Cities (725):

Avail Gens: 19325.1
 Total Gens: 11709.0
 Total Load: 11544.8
 Total Loss: 276.5
 Total Expt: -119.1
 Indus Load: 291.6

ForbesCap MVAR:
 1 of 1 machines
 QMIN: -450.0
 QMAX: 400.0
 QGEN: 172.3
 MARG: -277.7 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: -20.0
 ParksLake MVAR: 0.0

RapidCityDC: 0.0
 Stegal DC: 106.7
 Sidney DC: 20.9
 SWING (MW): 950.9/ 1154.5
 SWING (MVAR): 463.3/ 200.0

Brk-White: 35. MW

Nbr-Spnek: 8. MW

Nbr-LK-Flid: 6. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

Plj-Lt-WhITM: 196. MW

STINSON: 30. MW

ARROWHEAD: 250. MW

ANG: 8.68

ANG: 0.00

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ANG: 0.00

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ANG: 0.00

Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 2472.3
 Total Load: 2234.8
 Total Loss: 72.5
 Total Expt: 165.1
 Indus Load: 1010.2

MH to SPC Total: -0.1
 IslandFallsLOOP: -54.9
 MH to SPC (230): 54.7

Boundary_Dam: 875.0/ 875.0
 Poplar_River: 315.6/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 228.9/ 290.0
 Queen_Elizbt: 0.0/ 504.6
 Cors: 80.0/ 278.0
 Nipawin: 162.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 159.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 174.3
 Total Loss: 7.3
 Total Expt: 270.0
 Indus Load: 132.2

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 264.8
 Total Loss: 50.2
 Total Expt: 332.9
 Indus Load: 141.3

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -300.0
 QMAX: 225.6
 QGEN: 35.2
 MARG: 190.4 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 47.0
 MARG: 118.4 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 1023.2
 MARG: 676.8 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 49.4
 Dorsey230 MVAR: 755.6
 Handey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6149.0
 Total Gens: 5032.2
 Total Load: 2345.0
 Total Loss: 291.7
 Total Expt: 2395.5
 Indus Load: 663.4

NDC_to_NAC: 0.0
 NDC_to_WPG: 3087.4
 NAC_to_WES: 270.0
 WES_to_WPG: 603.1
 WRV_to_WPG: 318.5

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 1174.2/ 138.7
 Long_Spruce: 900.3/ 1030.6
 Kettle: 1026.6/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 89.6
 Great_Falls: 136.3/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 99.0/ 99.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 1380.0
 Bipole2: 1562.0
 Bipole3: 0.0
 MHEX: 2175.0

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 3101.1
 Total Load: 0.2
 Total Loss: 13.5
 Total Expt: 3087.4
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27538.4
 Total Load: 28003.7
 Total Loss: 741.3
 Total Expt: -1276.8

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 51.2
 Total Expt: 144.9

MH to ONT Total: 220.7
 East West Ties: -193.6

Umbata Falls: 0.0/ 0.0
 Ft_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 39.0/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valerie_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 594.6
 Total Load: 13.3
 Total Expt: 592.2
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 1863.6
 Total Loss: 207.4
 Total Expt: 1838.0
 Indus Load: 390.0

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 6488.5
 Total Load: 2663.5
 Total Loss: 321.5
 Total Expt: 3502.2
 Indus Load: 374.7

ND Coal Fields (711):

Avail Gens: 6456.6
 Total Gens: 5441.4
 Total Load: 1291.9
 Total Loss: 195.2
 Total Expt: 3953.8
 Indus Load: 355.7

ND Red Avr Vly (710):

Avail Gens: 403.7
 Total Gens: 137.1
 Total Load: 543.5
 Total Loss: 37.0
 Total Expt: -443.3
 Indus Load: 0.0

ND Southeastern (712):

Avail Gens: 1311.3
 Total Gens: 910.0
 Total Load: 828.1
 Total Loss: 89.3
 Total Expt: -8.3
 Indus Load: 19.0

ND NDEX_AC: 1908.0

CUDC: 1063.2

SQButteDC: 475.0

MilesCityDC: 56.0

East Bias: 185.3

Fargo_SVC MVAR:

0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:

1 of 1 machines
 OMIN: -86.4
 QMAX: 125.0
 QGEN: 54.7
 MARG: 70.3 (Out:0.0)

SHUNTS:

PrairieFSH MVAR: 120.0
 ShyenneSW MVAR: 0.0
 Ramsey230 MVAR: 30.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1197.6/ 1240.0
 Coote: 437.5/ 453.0
 Garrison: 463.6/ 480.0
 Hesket: 107.9/ 111.7
 Leland_Olds: 697.1/ 705.0
 Stanton: 186.4/ 193.0
 Yng_Cntr_SqB: 725.3/ 751.0
 Hood_Lake: 104.2/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 0.0/ 52.5
 Hetland: 0.0/ 25.2
 Solway: 47.1/ 96.2
 Lewis: 54.1/ 56.0
 BigStone: 388.5/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 104.3/ 108.0
 Rugby_Mind: 70.0/ 150.0
 G904: 60.0/ 151.8
 Langdon_Mind: 90.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 11.6/ 12.0
 MapleRiverND: 2.0/ 2.0
 Diver_Mind: 48.9/ 100.1
 Bison_Mind: 0.0/ 75.0
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 29.0/ 30.0
 CedarHillMND: 18.8/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 7.2/ 127.5
 Ponoma: 40.0/ 40.5
 Ecklund: 95.6/ 99.0
 NordPrairieND: 476.5/ 540.5
 FibroMinn: 50.0/ 50.0
 Edgely: 13.7/ 100.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 448.5/ 597.2
 Luverne: 58.5/ 91.0
 Prairie: 0.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLRUSTS: 0.0/ 9.0
 WPS: 1.5/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 GDXX4: -30.0/ 40.0
 NBCS: 21.7/ 22.5
 Baldwin: 95.0/ 99.0
 Glen_DC: 0.0/ 90.0
 GU_NBCSG: 6.8/ 7.0
 Drayton: 0.0/ 125.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 137.1
 Total Load: 543.5
 Total Loss: 37.0
 Total Expt: -443.3
 Indus Load: 0.0

ND Southeastern (712):
 Avail Gens: 1311.3
 Total Gens: 910.0
 Total Load: 828.1
 Total Loss: 89.3
 Total Expt: -8.3
 Indus Load: 19.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2291.0/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Wilcomer: 35.2/ 35.2
 Cornell: 25.7/ 30.5
 JimFalls: 28.4/ 28.4
 RiversSide: 0.0/ 150.3
 Black_Dog: 373.0/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 0.0/ 177.3
 LSSTeam: 0.0/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 0.0/ 489.2
 InverDrills: 50.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.9/ 0.9
 Fenton: 0.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 0.0/ 372.0
 GHH: 20.7/ 36.7
 HESTPIP: 4.6/ 8.3
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLTYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 32.4/ 32.4
 Hridge: 4.1/ 7.3
 CRIDGE: 5.6/ 10.0
 Colvill: 0.0/ 357.0
 HBR: 0.0/ 610.0
 G25: 200.0/ 200.0
 G25S: 50.0/ 100.0
 RIVERSIDE: 0.0/ 406.2
 RiverFalls: 0.0/ 20.0
 Sridge: 3.0/ 5.4
 G176: 0.0/ 160.0
 BR13: 153.3/ 287.5
 CHB3: 244.0/ 281.1
 GRNDMDM: 0.0/ 100.5
 G609: 0.0/ 5.0
 NOB: 200.0/ 200.0
 UTLK: 2.5/ 5.0
 FEP_ST: 100.0/ 100.0
 Grant_City: 60.0/ 60.0
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_VA: 12.0/ 26.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 RFBell: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MHEX: 1516.6
 MWSI: 1395.0
 TCEX: 1064.9

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1444.1
 Total Load: 1456.7
 Total Loss: 108.9
 Total Expt: -121.9
 Indus Load: 894.4

Minn Wiscon (725)

Avail Gens: 15421.3
 Total Gens: 8346.5
 Total Load: 9220.6
 Total Loss: 526.9
 Total Expt: -1408.2

Twin Cities (725):

Avail Gens: 19325.1
 Total Gens: 6302.4
 Total Load: 7763.9
 Total Loss: 418.0
 Total Expt: -1286.3
 Indus Load: 251.4

ForbesCap MVAR:

1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 311.9
 MARG: 86.1 (Out:0.0)

SHUNTS:

ForbesCap MVAR: 600.0
 Running230 MVAR: -20.0
 ParksLake MVAR: 0.0

RapidCityDC: 0.0
 Stegal DC: 0.0
 Sidney DC: 21.5
 SWING (MW): 961.0/ 1154.5
 SWING (MVAR): 481.5/ 200.0

Wbl-Spex: 67.7 MW
 Wbl-LK Rd: 497.7 MW
 Lakeland: 46 MW
 Burns-Plat: 502 MW
 Burns-Plat: 393 MW

PLSD-Dur: 746 MW
 Burns-Plat: 502 MW
 Burns-Plat: 393 MW

Saskatchewan (672)

Avail Gens: 4684.8
 Total Gens: 3670.9
 Total Load: 3753.6
 Total Loss: 83.4
 Total Expt: -166.2
 Indus Load: 1361.4

MH to SPC Total: 1.1
 IslandFallsLOOP: -53.7
 MH to SPC (230): 54.8

Boundary Dam: 723.4/ 875.0
 Poplar River: 592.5/ 630.0
 REDUC: 11.0/ 26.4
 SHAND: 286.9/ 305.0
 EB_Campbell: 264.2/ 290.0
 Queen_Elizabeth: 389.5/ 504.6
 Corus: 231.2/ 278.0
 Nipawin: 239.8/ 255.0
 Island Falls: 88.2/ 101.0
 Meridian: 204.8/ 235.0
 Coteau_Creek: 156.2/ 183.0
 ERMIN: 38.5/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 62.2/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 30.6/ 40.0
 Success: 0.0/ 30.0
 BRADA: 38.5/ 141.0
 CYPUSU: 9.1/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 384.4
 Total Load: 265.3
 Total Loss: 7.2
 Total Expt: 111.9
 Indus Load: 139.7

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 456.2
 Total Loss: 30.1
 Total Expt: 151.5
 Indus Load: 148.5

Grand Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 51.3
 MARG: 113.9 (Out:0.0)

7 Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 35.5
 MARG: 132.5 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 48.3
 MARG: 1651.7 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 45.1
 MARG: 954.9 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.0
 Dorsey230 MVAR: 44.0
 Riel230 MVAR: 200.0
 Henday230 MVAR: 100.0
 Radison138 MVAR: 150.0
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Manitoba (667)

Avail Gens: 6858.0
 Total Gens: 2897.9
 Total Load: 3579.0
 Total Loss: 155.5
 Total Expt: -836.6
 Indus Load: 760.0

NDC_to_NAC: 0.0
 NDC_to_WPG: 1030.7
 NAC_to_WES: 111.8
 WES_to_WPG: 262.2
 WAV_to_WPG: 640.5

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 335.7/ 1348.7
 Long_Spruce: 255.5/ 1030.6
 Kettle: 442.9/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 139.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine Falls: 89.6/ 103.6
 Great Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave Falls: 68.0/ 68.0
 7 Sisters: 165.4/ 165.4
 Seikirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St Leon: 99.0/ 99.0
 St Joseph: 138.0/ 138.0
 St Laurent: 0.0/ 0.0

Bipole1: 324.0
 Bipole2: 348.0
 Bipole3: 348.0
 MHX: -710.8

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 1035.1
 Total Load: 0.3
 Total Loss: 4.1
 Total Expt: 1030.7
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 28695.7
 Total Load: 29131.5
 Total Loss: 752.8
 Total Expt: -1258.2

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 35.7
 Total Expt: 186.1

MH to ONT Total: -126.9
 East West Ties: -137.0

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 44.7/ 0.0
 Caribou_Fis: 40.1/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 39.2/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Fort: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 66.3
 Total Loss: 13.6
 Total Expt: 513.6
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 2780.8
 Total Loss: 100.4
 Total Expt: -2644.3
 Indus Load: 411.8

North Dakota (700)

Avail Gens: 8841.6
 Total Gens: 7906.8
 Total Load: 4315.5
 Total Loss: 362.0
 Total Expt: 3227.9
 Indus Load: 0.0

NDEX_AC: 1602.6
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 87.0
 East Bias: 176.2

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.0
 QMAX: 124.4
 QGEN: -72.1
 MARG: -14.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 80.0
 ShayenneSW MVAR: 80.0
 Ramsey230 MVAR: 60.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.4
 Indus Load: 0.0

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcombe: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 Jim Falls: 56.5/ 56.5
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 49.9/ 49.9
 Blue_Lake: 316.9/ 489.2
 Inver Hills: 300.0/ 300.0
 White: 105.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 351.0/ 372.0
 GHI: 7.4/ 8.3
 HESTPIP: 1.6/ 8.3
 FEP: 150.0/ 150.0
 FEP: 1.1/ 5.4
 G176: 180.5/ 60.0
 BR13: 95.9/ 287.5
 CH83: 173.3/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 5.0/ 5.0
 NOB: 200.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 60.5/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_VA: 26.0/ 26.0
 Hurley: 0.0/ 0.0
 Hurley: 0.0/ 0.0
 Bearth: 0.0/ 0.0
 BigFalls: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 30.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 8.0/ 8.0
 KENYNU: 0.0/ 5.4

NOT FOUND
 Lapt-AkU
 8. MW
 Audb-Hubd
 105. MW
 Inmn-WngR
 73. MW
 Alax-Dgls
 71. MW
 GLCH-WILM
 21. MW
 Kerk-kart
 6. MW
 Mops-GrnF
 25. MW
 Camb-GrnF
 24. MW

8. MW
 105. MW
 73. MW
 71. MW
 21. MW
 6. MW
 25. MW
 24. MW

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 105. MW
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 24. MW

8. MW
 105. MW
 73. MW
 71. MW
 21. MW
 6. MW
 25. MW
 24. MW

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcombe: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 Jim Falls: 56.5/ 56.5
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 49.9/ 49.9
 Blue_Lake: 316.9/ 489.2
 Inver Hills: 300.0/ 300.0
 White: 105.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 351.0/ 372.0
 GHI: 7.4/ 8.3
 HESTPIP: 1.6/ 8.3
 FEP: 150.0/ 150.0
 FEP: 1.1/ 5.4
 G176: 180.5/ 60.0
 BR13: 95.9/ 287.5
 CH83: 173.3/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 5.0/ 5.0
 NOB: 200.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 60.5/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_VA: 26.0/ 26.0
 Hurley: 0.0/ 0.0
 Hurley: 0.0/ 0.0
 Bearth: 0.0/ 0.0
 BigFalls: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 30.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 8.0/ 8.0
 KENYNU: 0.0/ 5.4

NOT FOUND
 Lapt-AkU
 8. MW
 Audb-Hubd
 105. MW
 Inmn-WngR
 73. MW
 Alax-Dgls
 71. MW
 GLCH-WILM
 21. MW
 Kerk-kart
 6. MW
 Mops-GrnF
 25. MW
 Camb-GrnF
 24. MW

8. MW
 105. MW
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 71. MW
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8. MW
 105. MW
 73. MW
 71. MW
 21. MW
 6. MW
 25. MW
 24. MW

MWEX: 479.0
 MWSI: 452.4
 TCEX: -875.0

MWEX: 479.0
 MWSI: 452.4
 TCEX: -875.0

MWEX: 479.0
 MWSI: 452.4
 TCEX: -875.0

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 TCEX: -875.0

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 MWSI: 452.4
 TCEX: -875.0

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

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 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.9
 Indus Load: 1117.4

Antelope: 960.0/ 960.0
 Coal_Creek: 1290.0/ 1290.0
 Coote: 453.0/ 453.0
 Garrison: 480.0/ 480.0
 Heskett: 111.7/ 111.7
 Leland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 149.1/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 52.5/ 52.5
 Hetland: 25.2/ 25.2
 Solway: 63.5/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 26.0/ 26.0
 Fort_Peck: 108.0/ 108.0
 Rugby_Wind: 150.0/ 150.0
 G904: 151.8/ 151.8
 Langdon_Wind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Wind: 11.4/ 12.0
 MapleRiverND: 2.0/ 2.0
 Bison_Wind: 50.6/ 100.1
 Spirit_Wind: 71.7/ 75.0
 Spirit_Wind: 102.6/ 102.6
 Diamond_HillND: 30.0/ 30.0
 Cedar_Hill_Wind: 18.6/ 19.5
 Tatanka_WND: 0.0/ 180.0
 Culbertson: 127.5/ 127.5
 Pomes: 40.0/ 40.5
 Ecklund: 94.6/ 99.0
 NordPrairieND: 114.7/ 115.5
 Fibrominn: 50.0/ 50.0
 Edgely: 13.7/ 13.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 138.9/ 229.2
 Luverne: 91.0/ 91.0
 Prairie: 4.0/ 4.0
 AlexPDM: 7.8/ 7.8
 DLUDS1: 9.0/ 9.0
 WPS: 11.5/ 11.5
 Benson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 DGX4: -30.0/ 40.0
 NBGS: 22.5/ 22.5
 Baldwin: 59.0/ 59.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

ND Coal Fields (711):
 Avail Gens: 7126.6
 Total Gens: 6460.8
 Total Load: 2020.4
 Total Loss: 213.0
 Total Expt: 4226.9
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 246.0
 Total Load: 861.1
 Total Loss: 50.5
 Total Expt: -665.6
 Indus Load: 0.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.4
 Indus Load: 0.0

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 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.4
 Indus Load: 0.0

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 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.4
 Indus Load: 0.0

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 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.4
 Indus Load: 0.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.4
 Indus Load: 0.0

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcombe: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 Jim Falls: 56.5/ 56.5
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 49.9/ 49.9
 Blue_Lake: 316.9/ 489.2
 Inver Hills: 300.0/ 300.0
 White: 105.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 351.0/ 372.0
 GHI: 7.

Saskatchewan (672)

Avail Gens: 4684.8
 Total Gens: 3670.9
 Total Load: 3753.6
 Total Loss: 85.6
 Total Expt: -168.3
 Indus Load: 1361.4

MH to SPC Total: 3.4
 IslandFallsLOOP: -53.7
 MH to SPC (230): 57.1

Boundary_Dam: 723.4/ 875.0
 Poplar_River: 592.5/ 630.0
 REDUC: 11.0/ 26.4
 SHAND: 286.9/ 305.0
 EB_Campbell: 264.2/ 290.0
 Queen_Elizbt: 389.5/ 504.6
 Corus: 231.2/ 278.0
 Nipawin: 239.8/ 255.0
 Island_Falls: 88.2/ 101.0
 Meridian: 208.8/ 235.0
 Coteau_Creek: 156.2/ 183.0
 ERMIN: 38.5/ 94.0
 Lands: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 62.2/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 30.6/ 40.0
 Success: 30.5/ 30.0
 BRADA: 38.5/ 41.0
 CYPUSU: 9.1/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.3
 Total Load: 257.5
 Total Loss: 7.4
 Total Expt: 186.4
 Indus Load: 131.9

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 468.4
 Total Loss: 38.2
 Total Expt: 141.3
 Indus Load: 151.2

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 93.5
 MARG: 71.7 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 27.5
 MARG: 138.5 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: 0.0
 MARG: 95.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 21.8
 MARG: 1678.2 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 141.4
 MARG: 858.6 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.0
 Dorsey230 MVAR: 44.0
 Riel230 MVAR: 100.0
 Henday230 MVAR: 100.0
 Radison138 MVAR: 150.0
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6858.2
 Total Gens: 2909.4
 Total Load: 3579.0
 Total Loss: 151.6
 Total Expt: -821.1
 Indus Load: 833.8

NDC_to_NAC: 0.0
 NDC_to_WPG: 975.6
 NAC_to_WES: 186.4
 WES_to_WPG: 324.3
 WRV_to_WPG: 564.8

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 316.1/ 1388.7
 Long_Spruce: 241.5/ 1030.6
 Kettle: 422.1/ 1233.2
 Kelsey: 251.0/ 315.0
 Muskatim: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 103.7
 Great_Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Seikirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 99.0/ 99.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 306.0
 Bipole2: 330.0
 Bipole3: 330.0
 MHEX: -697.6

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 979.7
 Total Load: 0.3
 Total Loss: 3.8
 Total Expt: 975.6
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 979.7
 Total Load: 29131.5
 Total Loss: 752.9
 Total Expt: -1258.3

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 35.7
 Total Expt: 186.0

MH to ONT Total: -127.0
 East West Ties: -137.0

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawaty: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 44.7/ 0.0
 Caribou_Fis: 40.1/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 39.2/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Fort: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 Whitedog_GS: 57.0/ 0.0
 Valerie_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.2
 Total Gens: 593.5
 Total Load: 142.8
 Total Loss: 12.9
 Total Expt: 437.8
 Indus Load: 78.4

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 2710.0
 Total Loss: 89.3
 Total Expt: -256.3
 Indus Load: 410.3

North Dakota (700)

Avail Gens: 8841.6
 Total Gens: 6369.3
 Total Load: 4315.5
 Total Loss: 288.1
 Total Expt: 1764.3
 Indus Load: 0.0

NDEX_AC: 139.1
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 87.0
 East Bias: 58.7

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.0
 QMAX: 124.4
 QGEN: -86.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 40.0
 ShayenneSW MVAR: 80.0
 Ramsey230 MVAR: 60.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 627.0
 Total Load: 1434.0
 Total Loss: 67.2
 Total Expt: -875.2
 Indus Load: 0.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hiltman: 22.0/ 22.0
 Holcomber: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 JimFalls: 56.5/ 56.5
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 49.9/ 49.9
 Blue_Lake: 316.9/ 489.2
 InverHills: 300.0/ 300.0
 White: 105.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 1.6/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BILSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 ERIDGE: 25.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G255: 200.0/ 200.0
 G256: 50.0/ 100.0
 RIVERSIDE: 406.2/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 60.5/ 60.5
 BR13: 95.9/ 287.5
 CHB3: 173.3/ 281.1
 GRNDMDH: 100.5/ 100.5
 G609: 5.0/ 5.0
 NOB: 200.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 60.5/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_VA: 26.0/ 26.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 BigFalls: 0.0/ 7.7
 GRANFLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 8.0/ 8.0
 KENYNU: 0.0/ 5.4

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 61.5
 Total Load: 861.1
 Total Loss: 32.7
 Total Expt: -826.3
 Indus Load: 0.0

Lept-Akly
 3. MW
 Raud-Hubd
 39. MW
 Inm-WngR
 20. MW
 Alax-Dgls
 57. MW
 GLCH-WILM
 17. MW
 Kerp-kert
 12. MW
 Mops-GrnF
 94. MW
 Camb-GrnF
 3. MW

MNEX: 168.4
 MWSI: 472.8
 TCEx: -135.7

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1542.4
 Total Load: 1940.9
 Total Loss: 80.4
 Total Expt: -479.4
 Indus Load: 1117.4

KNG-EauCir
 118. MW
 EauCir-Arp
 76. MW

Minn Wisconsin (725)

Avail Gens: 16189.3
 Total Gens: 12814.7
 Total Load: 14280.3
 Total Loss: 400.8
 Total Expt: -1874.0

Twin Cities (725):
 Avail Gens: 19375.1
 Total Gens: 11272.2
 Total Load: 12399.4
 Total Loss: 320.4
 Total Expt: -1394.5
 Indus Load: 289.7

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 106.7
 MARG: -343.3 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: -20.0
 ParksLake MVAR: 0.0

Antelope: 930.7/ 960.0
 Coal_Creek: 1221.9/ 1240.0
 Coote: 449.3/ 453.0
 Garrison: 480.0/ 480.0
 Heskett: 98.8/ 111.7
 Leland_Olds: 700.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 642.0/ 751.0
 Hood_Lake: 107.9/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 33.9/ 52.5
 Hetland: 16.4/ 25.2
 Solway: 63.5/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 300.1/ 494.0
 Miles_City: 25.3/ 26.0
 Fort_Peck: 108.0/ 108.0
 Rugby_Wind: 150.0/ 150.0
 G904: 150.0/ 151.8
 Langdon_Wind: 0.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Wind: 2.4/ 12.0
 MapleRiver_WD: 0.3/ 2.0
 Diver_Wind: 20.0/ 100.1
 Bison_Wind: 15.0/ 75.0
 Spirit_Wind: 75.0/ 102.6
 Diamond_Hill_WD: 8.0/ 30.0
 Cedar_Hill_Wind: 3.9/ 19.5
 Tatanka_WND: 0.0/ 180.0
 Culbertson: 80.5/ 127.5
 Pomes: 6.1/ 40.5
 Ecklund: 19.8/ 99.0
 NordPrairie_WD: 24.0/ 115.5
 Fibrominn: 37.9/ 50.0
 Edgely: 3.2/ 13.7
 Elbow_Lake: 0.0/ 21.0
 Ashtabula: 8.0/ 229.2
 Luverne: 8.3/ 91.0
 Prairie: 4.0/ 4.0
 Alex_PDM: 5.9/ 7.8
 DLURD5: 6.8/ 9.0
 HPS: 7.8/ 11.5
 Benson: 9.2/ 12.2
 RVS: -39.2/ 44.0
 DGX4: -30.0/ 40.0
 NBGS: 16.5/ 22.5
 Baldwin: 19.0/ 39.0
 Glen_DC: 87.0/ 90.0
 GU_NBCSG: 5.0/ 7.0
 Drayton: 0.0/ 125.0

RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 977.8/ 1154.5
 SWING (MVAR): 497.4/ 200.0

ND Coal Fields (711):
 Avail Gens: 7126.6
 Total Gens: 5674.8
 Total Load: 2020.4
 Total Loss: 189.2
 Total Expt: 3465.8
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 61.5
 Total Load: 861.1
 Total Loss: 32.7
 Total Expt: -826.3
 Indus Load: 0.0

STINSON
 30. MW
 ANGIO 5.00
 ARROWHEAD
 51. MW
 ANGIO 0.00
 KNG-EauCir
 118. MW
 EauCir-Arp
 76. MW
 PRISLD-Burn
 NOT FOUND
 Burn-Fleury
 516. MW
 Adams-Hazel
 242. MW

Saskatchewan (672)

Avail Gens: 4684.8
Total Gens: 2896.2
Total Load: 2655.6
Total Loss: 73.5
Total Expt: 167.1
Indus Load: 1361.4

MH to SPC Total: -3.4
IslandFallsLOOP: -54.5
MH to SPC (230): 51.1

Boundary_Dam: 875.0/ 875.0
Poplar_River: 630.0/ 630.0
REDUC: 10.6/ 26.4
SHAND: 305.0/ 305.0
EB_Campbell: 192.8/ 290.0
Queen_Elizb2: 162.0/ 504.6
Corus: 80.0/ 278.0
Nipawin: 255.0/ 255.0
Island_Falls: 89.0/ 101.0
Meridian: 159.0/ 235.0
Coteau_Creek: 100.0/ 183.0
ERMIN: 0.0/ 94.0
Lands: 0.0/ 76.5
Meadow_Lake: 80.0/ 43.0
CentennialHd: 59.8/ 149.4
RSHLD: 0.0/ 0.0
BPLNS: 29.4/ 40.0
Success: 0.0/ 30.0
BRADA: 0.0/ 141.0
CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
Avail Gens: 537.9
Total Gens: 45.4
Total Load: 233.9
Total Loss: 7.4
Total Expt: 210.1
Indus Load: 193.4

WESTERN MAN (702):
Avail Gens: 647.9
Total Gens: 647.9
Total Load: 38.0
Total Loss: 38.0
Total Expt: 257.0
Indus Load: 143.8

Grand_Rapids MVAR:
4 of 4 machines
OMIN: -160.0
QMAX: 165.2
QGEN: 40.8
MARG: 124.4 (Out:0.0)

7_Sisters MVAR:
6 of 6 machines
OMIN: -136.0
QMAX: 165.0
QGEN: 77.7
MARG: 88.3 (Out:0.0)

BirchtreeSVC MVAR:
1 of 1 machines
OMIN: -50.0
QMAX: 1700.0
QGEN: -0.0
MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
1 of 1 machines
OMIN: -20.0
QMAX: 150.0
QGEN: -0.0
MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
8 of 9 machines
OMIN: -895.0
QMAX: 1700.0
QGEN: 208.9
MARG: 1491.1 (Out:160.0)

Riel_Sync MVAR:
4 of 4 machines
OMIN: -548.0
QMAX: 1000.0
QGEN: 482.8
MARG: 517.2 (Out:0.0)

SHUNTS:
Brandon110 MVAR: 98.8
Dorsey230 MVAR: 355.0
Riel230 MVAR: 200.0
Henday230 MVAR: 600.0
Radison138 MVAR: 229.3
StJoseph34 MVAR: 20.0
StLeon34 MVAR: 0.0

Manitoba (667)

Avail Gens: 6858.0
Total Gens: 5137.7
Total Load: 2505.0
Total Loss: 243.7
Total Expt: 2389.0
Indus Load: 736.1

NDC_to_NAC: 0.0
NDC_to_WPG: 3171.7
NAC_to_WES: 210.1
WES_to_WPG: 470.5
WVW_to_WPG: 333.8

Keeyask: 0.0/ 695.1
Conawapa: 0.0/ 0.0
Limestone: 1132.2/ 1388.7
Long_Spruce: 864.6/ 1030.6
Kettle: 1196.5/ 1233.2
Kelsey: 251.3/ 315.0
Muskeg: 200.1/ 222.9
Jenpeg: 168.0/ 168.0
Grand_Rapids: 479.9/ 479.9
Pine_Falls: 103.6/ 103.6
Great_Falls: 136.3/ 136.8
McArthur: 56.0/ 56.5
PointeDuBois: 78.8/ 78.8
Slave_Falls: 68.0/ 68.0
7_Sisters: 165.4/ 165.4
Selkirk: 0.0/ 132.0
Brandon: 0.0/ 386.5
St_Louis: 99.0/ 99.0
St_Joseph: 138.0/ 138.0
St_Laurent: 0.0/ 0.0

Bipole1: 974.0
Bipole2: 1050.0
Bipole3: 1046.0
MHX: 2173.5

NORTHERN COLLECTOR (700):
Avail Gens: 4307.6
Total Gens: 3193.3
Total Load: 0.2
Total Loss: 21.4
Total Expt: 3171.7
Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
Total Gens: 28695.7
Total Load: 29131.5
Total Loss: 785.1
Total Expt: -1290.2

WESTERN ONTARIO (1101):
Avail Gens: 1660.4
Total Gens: 805.6
Total Load: 592.0
Total Loss: 55.4
Total Expt: 166.4

MH to ONT Total: 218.9
East West Ties: -212.7

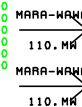
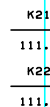
Umbata Falls: 0.0/ 0.0
FT_Francis: 0.0/ 0.0
DONTAR_DRYDN: 0.0/ 0.0
Bowat_Kraft: 0.0/ 0.0
Ter_Bay_Pulp: 0.0/ 0.0
Lakeland: 0.0/ 0.0
Muriillo_DS8: 12.2/ 0.0
Aven_Tbay: 0.0/ 0.0
MusselWhite: 0.0/ 0.0
Atikokan: 48.2/ 0.0
Thunder_Bay: 186.9/ 0.0
Aguasabon: 42.7/ 0.0
Alexander: 50.2/ 0.0
Hawaty: 5.2/ 0.0
Calm_Lake_GS: 0.0/ 0.0
Cameron_Fis: 44.7/ 0.0
Caribou_Fis: 40.1/ 0.0
Ear_Falls_GS: 16.7/ 0.0
Westcoast: 67.5/ 0.0
Man_FLS: 39.2/ 0.0
Norman_GS: 5.2/ 0.0
Pine_Fort: 102.9/ 0.0
Silver_Falls: 43.8/ 0.0
Sturgeon_FLS: 0.0/ 0.0
TCP_Nipigon: 39.9/ 0.0
Whitford_GS: 57.0/ 0.0
Valerie_Fis: 0.0/ 0.0
Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
Total Gens: 609.1
Total Load: 14.5
Total Loss: 14.5
Total Expt: 552.7
Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
Total Gens: 237.0
Total Load: 1877.1
Total Loss: 162.5
Total Expt: 1802.5
Indus Load: 398.9



Antelope: 960.0/ 960.0
Coal_Creek: 1290.0/ 1290.0
Coopter: 453.0/ 453.0
Garrison: 192.0/ 480.0
Heskett: 111.7/ 111.7
Leland_Olds: 705.0/ 705.0
Stanton: 193.0/ 193.0
Yng_Cntr_SqB: 713.6/ 751.0
Hoot_Lake: 65.0/ 149.1
Williston: 10.0/ 10.0
Jameson: 52.5/ 52.5
Hutland: 25.0/ 25.2
Solway: 95.8/ 96.2
Lewis: 56.0/ 56.0
BigStone: 494.0/ 494.0
Miles_City: 0.0/ 26.0
Fort_Peck: 108.0/ 108.0
Rugby_Mind: 70.0/ 150.0
G904: 60.0/ 151.8
Langdon_Mind: 90.0/ 178.5
G873_G875: 0.0/ 0.0
G880: 0.0/ 0.0
J157: 0.0/ 0.0
Veiva_Mind: 12.0/ 12.0
MapleRiverND: 2.0/ 2.0
Bison_Mind: 50.6/ 100.1
Spirit_Wind: 102.6/ 102.6
DiamondHillND: 30.0/ 30.0
CedarHillMND: 19.5/ 19.5
Tatanka_MND: 0.0/ 180.0
Culbertson: 7.5/ 127.5
Ponoma: 40.0/ 40.0
Ecklund: 99.0/ 99.0
NordPrairieND: 115.5/ 115.5
Fibrominn: 50.0/ 50.0
Edgely: 13.7/ 13.7
ElbowLake: 21.0/ 21.0
Ashtabula: 139.8/ 229.2
Louverne: 91.0/ 91.0
Prairie: 4.0/ 4.0
AlexPLDM: 0.0/ 7.8
DLRUSTS: 0.0/ 9.0
HPS: 1.5/ 11.5
Genson: 12.2/ 12.2
RVS: -39.2/ 44.0
DGCX4: -30.0/ 40.0
NBCS: 22.5/ 22.5
Baldwin: 30.0/ 30.0
Glen_DC: 48.0/ 90.0
GU_NBCSG: 7.0/ 7.0
Orayton: 0.0/ 125.0

ND Coal Fields (711):

Avail Gens: 7126.6
Total Gens: 5538.7
Total Load: 1478.0
Total Loss: 170.2
Total Expt: 3690.1
Indus Load: 380.7

ND Red Avr Vly (710):

Avail Gens: 403.7
Total Gens: 185.8
Total Load: 607.1
Total Loss: 39.1
Total Expt: -454.5
Indus Load: 143.5

North Dakota (700)

Avail Gens: 8841.6
Total Gens: 6823.0
Total Load: 3015.0
Total Loss: 285.1
Total Expt: 3521.5
Indus Load: 562.4

NDEX_AC: 1928.2
CUUC: 1063.2
SQButteDC: 475.0
MilesCityDC: 55.0
East Bias: 104.9

Fargo_SVC MVAR:

0 of 1 machines
OMIN: 0.0
QMAX: 0.0
QGEN: 0.0
MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:

1 of 1 machines
OMIN: -86.4
QMAX: 125.0
QGEN: 27.3
MARG: 97.8 (Out:0.0)

SHUNTS:

PrairieFSH MVAR: 0.0
ShaynesW MVAR: 0.0
Renssey230 MVAR: 60.0

ND Southeastrn (712):

Avail Gens: 1311.3
Total Gens: 1098.5
Total Load: 929.9
Total Loss: 81.8
Total Expt: 85.9
Indus Load: 38.2

Montecello: 568.0/ 568.0

PrairieIsInd: 1044.0/ 1044.0
King: 555.0/ 555.0
Sherco: 2291.0/ 2291.0
French_IsInd: 28.0/ 28.0
Red_Hing: 22.4/ 22.4
Hilmarth: 22.0/ 22.0
Holcombe: 35.2/ 35.2
Cornell: 30.5/ 30.5
JinFalls: 56.3/ 56.3
Riverside: 150.3/ 150.3
Black_Dog: 548.6/ 548.6
BFTG: 22.3/ 22.3
LSP_CT: 177.3/ 177.3
LSSTeam: 106.2/ 106.2
MNRiver: 0.0/ 49.9
Blue_Lake: 172.3/ 489.2
InverHills: 250.0/ 300.0
White: 0.0/ 322.0
WhiteG: 0.8/ 0.9
Fenton: 0.0/ 136.0
STP_Go: 25.0/ 25.0
BFT: 50.5/ 50.5
MEC: 0.0/ 372.0
HESTPIP: 3.0/ 8.3
CHM: 13.4/ 36.7
FEP: 145.0/ 150.0
Janessville: 0.0/ 5.0
FLTYCD: 4.6/ 4.6
BLSBY: 2.4/ 2.4
KEYCT: 32.4/ 32.4
Hridge: 2.7/ 7.3
ERidge: 3.7/ 10.0
Colvill: 0.0/ 357.0
HBR: 0.0/ 610.0
G255: 200.0/ 200.0
G256: 100.0/ 100.0
RIVERSIDE: 0.0/ 406.2
RiverFalls: 0.0/ 20.0
SRidge: 2.0/ 5.4
G176: 130.7/ 60.5
BR13: 80.6/ 287.5
CH83: 172.9/ 281.1
GRNDMDH: 0.0/ 100.5
G609: 0.0/ 5.0
NOB: 100.0/ 200.0
UTLK: 1.6/ 5.0
FEP-ST: 97.0/ 100.0
Grant_City: 30.7/ 60.5
HEAC: 33.7/ 33.7
STCloud: 6.7/ 6.7
Hart_ST: 12.0/ 26.0
Rich_VA: 12.0/ 12.0
Hurley: 0.0/ 0.0
Blearth: 0.0/ 8.2
Bigsby: 7.7/ 7.7
CRNFCLY: 0.0/ 7.4
LKCAYST: 0.0/ 5.8
Mackville: 0.0/ 9.7
Newville: 0.0/ 30.6
SLPY_MU: 0.0/ 8.6
FARFXNU: 0.0/ 2.7
MELARSU: 0.0/ 8.0
KENYNU: 0.0/ 5.4

MWEX: 1569.8
MWSI: 1253.1
TCEX: 1399.3

Minnesota Pwr (720):

Avail Gens: 2814.2
Total Gens: 1491.1
Total Load: 1809.9
Total Loss: 97.6
Total Expt: -417.0
Indus Load: 1117.4

KNG-Eaucir

901.MH

STINSON

29.MH
ANG: 27.76
ARROWHEAD
669.MH
ANG: 0.00

Minn Wiscon (725)

Avail Gens: 16189.3
Total Gens: 9230.8
Total Load: 10004.1
Total Loss: 543.3
Total Expt: -1324.1

Twin Cities (725):

Avail Gens: 13975.1
Total Gens: 7799.7
Total Load: 8194.2
Total Loss: 445.7
Total Expt: -907.0
Indus Load: 277.7

ForbesCap MVAR:

1 of 1 machines
OMIN: -450.0
QMAX: 400.0
QGEN: 257.4
MARG: 142.6 (Out:0.0)

SHUNTS:

ForbesCap MVAR: 600.0
Running230 MVAR: 0.0
ParksLake MVAR: 0.0

RapidCityDC: -50.0
Stegal DC: 0.0
Sidney DC: 21.5
SWING (MW): 974.3/ 1154.5
SWING (MVAR): 497.2/ 200.0

Bry-White

76.MH

Spreek

87.MH

Mel-LK-Fid

260.MH

Hilath-LK-Fid

116.MH

Burn-Platky

57.MH

Palms-Hazel

496.MH

Lak-Fid-DGUS

218.MH



Saskatchewan (672)

Avail Gens: 4684.8
 Total Gens: 2896.2
 Total Load: 2655.6
 Total Loss: 74.2
 Total Expt: 166.3
 Indus Load: 1361.4

MH to SPC Total: -1.4
 IslandFallsLOOP: -54.5
 MH to SPC (230): 53.1

Boundary_Dam: 875.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 192.8/ 290.0
 Queen_Elizb2: 162.0/ 504.6
 Cors: 80.0/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 159.0/ 235.0
 Coteau_Creek: 100.0/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 80.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 45.4
 Total Load: 229.5
 Total Loss: 7.4
 Total Expt: 214.6
 Indus Load: 189.7

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 351.4
 Total Loss: 39.5
 Total Expt: 257.0
 Indus Load: 141.1

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 44.5
 MRRG: 120.7 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 75.4
 MRRG: 89.6 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MRRG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MRRG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 240.3
 MRRG: 1459.7 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 440.5
 MRRG: 559.5 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 98.8
 Dorsey230 MVAR: 355.0
 Riel230 MVAR: 200.0
 Henday230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Manitoba (667)

Avail Gens: 6858.0
 Total Gens: 5176.5
 Total Load: 2505.0
 Total Loss: 281.4
 Total Expt: 2390.0
 Indus Load: 722.1

NDC_to_NAC: 0.0
 NDC_to_WPG: 3203.8
 NAC_to_WES: 214.6
 WES_to_WPG: 473.0
 WAV_to_WPG: 319.1

Keeyask: 479.4/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 1030.2/ 1388.7
 Long_Spruce: 787.2/ 1030.6
 Kettle: 949.9/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 103.6
 Great_Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 89.0/ 99.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 982.0
 Bipole2: 1060.0
 Bipole3: 1058.0
 MHEX: 2171.2

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 3246.7
 Total Load: 0.2
 Total Loss: 42.7
 Total Expt: 3203.8
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 28695.7
 Total Load: 29131.5
 Total Loss: 785.3
 Total Expt: -1290.4

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 55.6
 Total Expt: 166.3

MH to ONT Total: 220.3
 East West Ties: -214.4

Umbatawa: 0.0/ 0.0
 Ft_Francis: 0.0/ 0.0
 DONTAR_DAYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Arven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 44.7/ 0.0
 Caribou_Fis: 40.1/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 39.2/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Fort: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 Whitelog_GS: 57.0/ 0.0
 Valerie_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 40.2
 Total Loss: 13.9
 Total Expt: 594.4
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 1883.8
 Total Loss: 177.9
 Total Expt: -1828.5
 Indus Load: 391.3

North Dakota (700)

Avail Gens: 8841.6
 Total Gens: 4940.2
 Total Load: 3015.0
 Total Loss: 163.6
 Total Expt: 1760.2
 Indus Load: 562.4

ND Coal Fields (711):
 Avail Gens: 7126.6
 Total Gens: 4244.4
 Total Load: 1478.0
 Total Loss: 115.5
 Total Expt: 2650.5
 Indus Load: 380.7

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 95.6
 Total Load: 607.1
 Total Loss: 23.8
 Total Expt: -535.2
 Indus Load: 143.5

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 600.0
 Total Load: 929.9
 Total Loss: 24.3
 Total Expt: -355.1
 Indus Load: 38.2

ND NDEX_AC: 166.9
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 55.0
 East Bias: -34.5

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.4
 QMAX: 125.0
 QGEN: -86.4
 MRRG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 0.0
 ShayenneSW MVAR: 0.0
 Ramsey230 MVAR: 50.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2291.0/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hilsman: 22.0/ 22.0
 Holcomb: 35.2/ 35.2
 Cornell: 30.5/ 30.5
 JimFalls: 56.3/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 172.3/ 489.2
 InverHills: 250.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 0.0/ 136.0
 STP_Co: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 0.0/ 372.0
 HESTPIP: 3.0/ 8.3
 CHM: 13.4/ 36.7
 FEP: 145.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BILSBY: 2.4/ 2.4
 KEYCT: 32.4/ 32.4
 Hridge: 2.7/ 7.3
 GRD: 0.0/ 5.0
 Colvill: 0.0/ 357.0
 HBR: 0.0/ 610.0
 G255: 200.0/ 200.0
 G256: 100.0/ 100.0
 RIVERSIDE: 0.0/ 406.2
 RiverFalls: 0.0/ 20.0
 Sridge: 2.0/ 5.4
 G176: 130.7/ 160.0
 BR13: 80.6/ 287.5
 CHB3: 129.4/ 281.1
 GRDMDM: 0.0/ 100.5
 G609: 0.0/ 5.0
 NOB: 100.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP-ST: 97.0/ 100.0
 Rich_City: 30.7/ 60.5
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_VA: 12.0/ 26.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Blair: 0.0/ 7.4
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newville: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MHEX: 1238.9
 MWSI: 833.0
 TCEX: 911.6

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1491.1
 Total Load: 1809.9
 Total Loss: 92.8
 Total Expt: -412.2
 Indus Load: 1117.4

Minn Wisconsin (725)

Avail Gens: 16189.3
 Total Gens: 9187.3
 Total Load: 10004.1
 Total Loss: 432.4
 Total Expt: -1256.7

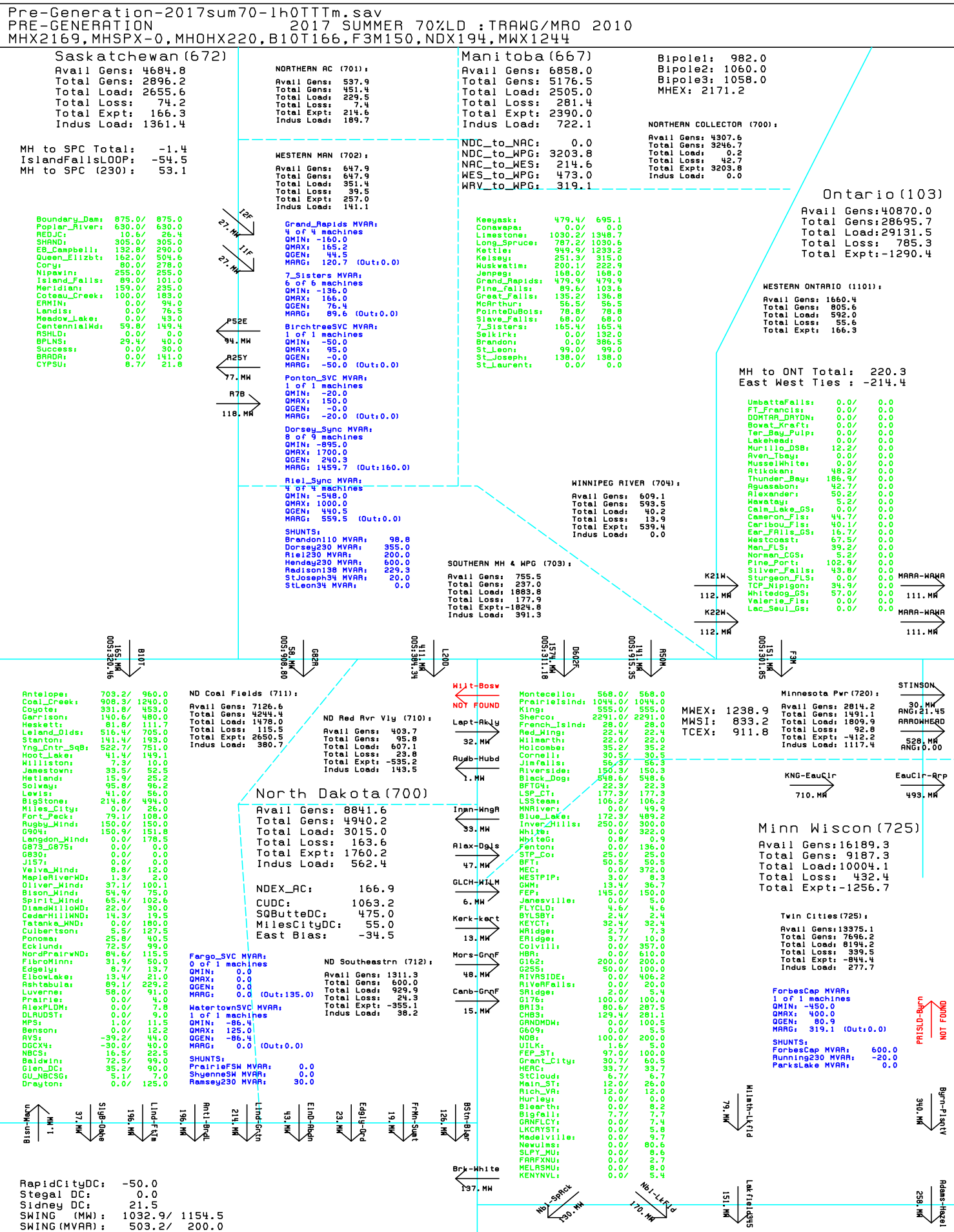
Twin Cities (725):
 Avail Gens: 19375.1
 Total Gens: 7896.2
 Total Load: 8194.2
 Total Loss: 399.5
 Total Expt: -844.4
 Indus Load: 277.7

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 80.9
 MRRG: 319.1 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 600.0
 Running230 MVAR: -20.0
 ParksLake MVAR: 0.0

Antelope: 703.2/ 960.0
 Coal_Creek: 908.3/ 1240.0
 Coote: 331.8/ 453.0
 Garrison: 140.6/ 480.0
 Hesket: 81.8/ 111.7
 Leland_Olds: 516.4/ 705.0
 Stanton: 141.4/ 193.0
 Yng_Cntr_SqB: 522.7/ 751.0
 Hood_Lake: 41.4/ 149.1
 Williston: 7.3/ 10.0
 Jamestown: 33.5/ 52.5
 Hetland: 15.9/ 25.2
 Solway: 95.8/ 96.2
 Lewis: 41.0/ 56.0
 BigStone: 214.8/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 79.1/ 108.0
 Rugby_Mind: 150.0/ 150.0
 G94: 150.9/ 151.8
 Langdon_Mind: 0.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 8.8/ 12.0
 MapleRiverND: 1.3/ 2.0
 Diver_Mind: 37.1/ 100.1
 Bison_Mind: 54.9/ 75.0
 Spirit_Wind: 65.4/ 102.6
 DiamondHillND: 22.0/ 30.0
 CedarHillMND: 14.3/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 5.5/ 127.5
 Ponoma: 25.0/ 40.5
 Ecklund: 72.5/ 99.0
 NordPrairieND: 84.6/ 115.5
 Fibrominn: 31.9/ 50.0
 Edgely: 8.7/ 13.7
 ElbowLake: 13.4/ 21.0
 Ashtabula: 89.1/ 229.2
 Luverne: 58.0/ 91.0
 Prairie: 0.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLUDST: 0.0/ 9.0
 HPS: 1.0/ 11.5
 Benson: 12.2/ 22.0
 RVS: -39.2/ 44.0
 GDXX4: -30.0/ 40.0
 NBCS: 12.5/ 22.5
 Baldwin: 72.5/ 99.0
 Glen_DC: 35.2/ 90.0
 GU_NBCSG: 5.1/ 7.0
 Drayton: 0.0/ 125.0

RapidCityDC: -50.0
 Stegal DC: 0.0
 Sidney DC: 21.5
 SWING (MW): 1032.9/ 1154.5
 SWING (MVAR): 503.2/ 200.0



Saskatchewan (672)

Avail Gens: 4996.9
 Total Gens: 4079.8
 Total Load: 4144.3
 Total Loss: 98.1
 Total Expt: -162.5
 Indus Load: 1356.2

MH to SPC Total: -1.8
 IslandFallsLOOP: -42.8
 MH to SPC (230): 40.9

Boundary_Dam: 709.0/ 875.0
 Poplar_River: 630.6/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 248.1/ 290.0
 Queen_Elizb2: 320.0/ 504.6
 Corus: 249.3/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 228.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 47.0/ 94.0
 Lands: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 94.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 451.4
 Total Load: 355.3
 Total Loss: 9.6
 Total Expt: 86.5
 Indus Load: 201.9

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 887.8
 Total Loss: 32.8
 Total Expt: -272.7
 Indus Load: 163.7

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 78.2
 MARG: 87.0 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 166.0
 QGEN: 10.5
 MARG: 155.5 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: 0.0
 MARG: 95.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: 0.0
 MARG: 150.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 136.8
 MARG: 1563.2 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 152.1
 MARG: 847.9 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 197.6
 Dorsey230 MVAR: 355.0
 Riel230 MVAR: 300.0
 Henday230 MVAR: 300.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6858.0
 Total Gens: 4178.7
 Total Load: 4779.0
 Total Loss: 226.3
 Total Expt: -826.6
 Indus Load: 769.0

NDC_to_NAC: 0.0
 NDC_to_WPG: 2236.6
 NAC_to_WES: 86.5
 WES_to_WPG: -184.4
 WAV_to_WPG: 522.0

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 722.6/ 1318.7
 Long_Spruce: 627.2/ 1030.6
 Kettle: 899.1/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 103.6
 Great_Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Seikirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Leons: 99.0/ 99.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 692.0
 Bipole2: 748.0
 Bipole3: 746.0
 MHEX: -699.7

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 2248.9
 Total Load: 0.3
 Total Loss: 12.1
 Total Expt: 2236.6
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 25158.5
 Total Load: 25726.5
 Total Loss: 620.5
 Total Expt: -1259.2

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 886.3
 Total Load: 642.0
 Total Loss: 39.3
 Total Expt: 201.2

MH to ONT Total: -125.1
 East West Ties: -156.0

UmbataFalls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DAYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Day_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DSB: 27.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokani: 50.0/ 0.0
 Thunder_Bay: 216.5/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 48.3/ 0.0
 Hawaty: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 45.7/ 0.0
 Caribou_Fis: 76.5/ 0.0
 Ear_Falls_GS: 16.3/ 0.0
 Westcoast: 26.2/ 0.0
 Man_Fis: 64.9/ 0.0
 Norman_GS: 6.5/ 0.0
 Pine_Fort: 104.0/ 0.0
 Silver_Falls: 40.1/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TGP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 63.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 8.8/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 183.6
 Total Loss: 12.9
 Total Expt: 396.9
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 755.5
 Total Gens: 237.0
 Total Load: 3352.0
 Total Loss: 158.9
 Total Expt: -3273.9
 Indus Load: 403.4

North Dakota (700)

Avail Gens: 8890.5
 Total Gens: 6882.4
 Total Load: 4803.2
 Total Loss: 321.2
 Total Expt: 1756.6
 Indus Load: 0.0

ND Coal Fields (711):
 Avail Gens: 7175.6
 Total Gens: 5742.5
 Total Load: 2105.9
 Total Loss: 205.4
 Total Expt: 3430.8
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 269.9
 Total Load: 1131.0
 Total Loss: 42.9
 Total Expt: -904.0
 Indus Load: 0.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 870.0
 Total Load: 1566.3
 Total Loss: 72.9
 Total Expt: -770.2
 Indus Load: 0.0

ND NDEX_AC: 133.4
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 85.0
 East Bias: 60.6

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.2
 QMAX: 124.7
 QGEN: -86.2
 MARG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 120.0
 ShayenneSW MVAR: 80.0
 Ramsey230 MVAR: 30.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2264.1/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hilmant: 22.0/ 22.0
 Holcomber: 0.0/ 35.2
 Cornell: 0.0/ 30.5
 JiveFalls: 50.0/ 50.0
 Riverside: 0.0/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 316.9/ 489.2
 InverHills: 0.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.0/ 0.9
 Fenton: 0.0/ 136.0
 Inver_Go: 0.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 2.9/ 8.3
 CHM: 12.9/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 0.0/ 4.6
 BLSBY: 0.0/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 2.6/ 7.3
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP_ST: 100.0/ 100.0
 Grant_City: 6.0/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 0.0/ 6.7
 Rich_VA: 0.0/ 26.0
 Rich_VA: 0.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Blair: 0.0/ 7.7
 GRANFLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newville: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSHU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

Wilt-Bow
 NOT FOUND
 Lept-Akly
 17. MW
 Raud-Hubd
 24. MW
 Inm-WngR
 37. MW
 Alax-Dgls
 61. MW
 GLCH-WILM
 13. MW
 Kerp-kert
 7. MW
 Mops-GrnF
 101. MW
 Canb-GrnF
 1. MW

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2264.1/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hilmant: 22.0/ 22.0
 Holcomber: 0.0/ 35.2
 Cornell: 0.0/ 30.5
 JiveFalls: 50.0/ 50.0
 Riverside: 0.0/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 316.9/ 489.2
 InverHills: 0.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.0/ 0.9
 Fenton: 0.0/ 136.0
 Inver_Go: 0.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 2.9/ 8.3
 CHM: 12.9/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 0.0/ 4.6
 BLSBY: 0.0/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 2.6/ 7.3
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP_ST: 100.0/ 100.0
 Grant_City: 6.0/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 0.0/ 6.7
 Rich_VA: 0.0/ 26.0
 Rich_VA: 0.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Blair: 0.0/ 7.7
 GRANFLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newville: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSHU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MEX: 269.2
 MWSI: 284.1
 TCEX: -814.2

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1616.5
 Total Load: 225.5
 Total Loss: 87.9
 Total Expt: -697.5
 Indus Load: 1117.4

Minn Wisconsin (725):
 Avail Gens: 16191.5
 Total Gens: 9902.5
 Total Load: 11463.4
 Total Loss: 333.5
 Total Expt: -1902.0

Twin Cities (725):
 Avail Gens: 13977.3
 Total Gens: 8286.0
 Total Load: 9237.8
 Total Loss: 245.5
 Total Expt: -1204.4
 Indus Load: 280.3

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 155.1
 MARG: -294.9 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

PRISLD-Burn
 NOT FOUND

Brk-White
 174. MW
 Wb-Spex
 86. MW
 Wb-LK-Flid
 304. MW

Wb-LK-Flid
 304. MW
 LakfieldGUS
 323. MW
 Adas-Hazel
 276. MW

Wb-LK-Flid
 304. MW
 LakfieldGUS
 323. MW
 Adas-Hazel
 276. MW

Wb-LK-Flid
 304. MW
 LakfieldGUS
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 Adas-Hazel
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Wb-LK-Flid
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 LakfieldGUS
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Wb-LK-Flid
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 LakfieldGUS
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Wb-LK-Flid
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 LakfieldGUS
 323. MW
 Adas-Hazel
 276. MW

Wb-LK-Flid
 304. MW
 LakfieldGUS
 323. MW
 Adas-Hazel
 276. MW

Saskatchewan (672)

Avail Gens: 4372.7
 Total Gens: 3452.1
 Total Load: 3514.8
 Total Loss: 100.2
 Total Expt: -163.0
 Indus Load: 1017.8

MH to SPC Total: -4.8
 IslandFallsLOOP: -43.5
 MH to SPC (230): 38.7

Boundary_Dam: 711.1/ 875.0
 Poplar_River: 629.1/ 630.0
 REDUC: 10.5/ 26.4
 SHAND: 304.6/ 305.0
 EB_Campbell: 268.7/ 290.0
 Queen_Elizbt: 319.5/ 504.6
 Corus: 248.9/ 278.0
 Nipawin: 254.6/ 255.0
 Island_Falls: 88.9/ 101.0
 Meridian: 227.7/ 235.0
 Coteau_Creek: 149.8/ 183.0
 ERMIN: 46.9/ 94.0
 Lands: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.7/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 46.9/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 598.0
 Total Gens: 424.4
 Total Load: 295.7
 Total Loss: 8.1
 Total Expt: 120.6
 Indus Load: 153.2

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 323.5
 Total Load: 792.1
 Total Loss: 23.8
 Total Expt: -492.4
 Indus Load: 153.4

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 19.2
 MARG: 146.2 (Out:0.0)

7_Sisters MVAR:
 5 of 6 machines
 OMIN: -132.0
 QMAX: 150.0
 QGEN: -14.0
 MARG: -118.0 (Out:32.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 704.2
 MARG: 995.8 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.2
 Dorsey230 MVAR: 755.6
 Handey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon94 MVAR: 0.0

Mani toba (667)

Avail Gens: 6165.0
 Total Gens: 3931.3
 Total Load: 4482.0
 Total Loss: 277.9
 Total Expt: -828.5
 Indus Load: 799.3

NDC_to_NAC: 0.0
 NDC_to_WPG: 2699.2
 NAC_to_WES: 120.6
 WES_to_WPG: -367.0
 WVV_to_WPG: 93.8

Keyask: 0.0/ 0.0
 Conewapa: 0.0/ 0.0
 Limestone: 1023.2/ 1348.7
 Long_Spruce: 784.6/ 1030.6
 Kettle: 902.6/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 179.1/ 223.0
 Jenpeg: 83.9/ 168.0
 Grand_Rapids: 239.6/ 479.9
 Pine_Falls: 28.0/ 89.6
 Great_Falls: 44.0/ 136.8
 McArthur: 20.5/ 56.5
 PointeDuBois: 37.0/ 78.8
 Slave_Falls: 33.0/ 68.0
 7_Sisters: 57.5/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Leon: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 1214.0
 Bipole2: 1374.0
 Bipole3: 0.0
 MHX: -700.1

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 2710.4
 Total Load: 0.3
 Total Loss: 11.0
 Total Expt: 2699.2
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 24321.5
 Total Load: 24859.6
 Total Loss: 645.7
 Total Expt: -1255.5

WESTERN ONTARIO (1101):
 Avail Gens: 1650.4
 Total Gens: 796.2
 Total Load: 697.3
 Total Loss: 32.4
 Total Expt: 62.0

MH to ONT Total: -123.6
 East West Ties: -19.6

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 3.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 0.0/ 0.0
 Thunder_Bay: 216.5/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 48.3/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 45.7/ 0.0
 Caribou_Fis: 83.3/ 0.0
 Ear_Falls_GS: 16.3/ 0.0
 Westcoast: 26.2/ 0.0
 Man_Fis: 53.3/ 0.0
 Norman_GS: 6.5/ 0.0
 Pine_Port: 104.0/ 0.0
 Silver_Falls: 40.1/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 39.3/ 0.0
 WhiteDog_GS: 63.0/ 0.0
 Valer_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 220.0
 Total Load: 242.7
 Total Loss: 7.0
 Total Expt: -29.8
 Indus Load: 76.1

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 3151.1
 Total Loss: 227.9
 Total Expt: -3126.0
 Indus Load: 416.5

ND Coal Fields (711):

Avail Gens: 6555.6
 Total Gens: 6166.8
 Total Load: 1770.6
 Total Loss: 224.0
 Total Expt: 4171.8
 Indus Load: 0.0

ND Red Avr Vly (710):

Avail Gens: 403.7
 Total Gens: 265.9
 Total Load: 1027.2
 Total Loss: 43.3
 Total Expt: -804.6
 Indus Load: 0.0

North Dakota (700)

Avail Gens: 8270.5
 Total Gens: 7704.7
 Total Load: 4247.4
 Total Loss: 380.4
 Total Expt: 3075.5
 Indus Load: 0.0

NDEX_AC: 1458.3

CUCD: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 79.0
 East Bias: 117.7

Fargo_SVC MVAR:

0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

ND Southeastrn (712):

Avail Gens: 1311.3
 Total Gens: 1272.0
 Total Load: 1449.7
 Total Loss: 113.1
 Total Expt: -291.6
 Indus Load: 0.0

WatertownSVC MVAR:

1 of 1 machines
 OMIN: -85.5
 QMAX: 123.6
 QGEN: -85.2
 MARG: -0.3 (Out:0.0)

SHUNTS:

PrairieFSH MVAR: 240.0
 ShayneSW MVAR: 160.0
 Ramsey230 MVAR: 90.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1290.0/ 1290.0
 Coote: 453.0/ 453.0
 Garrison: 435.0/ 435.0
 Hesket: 111.7/ 111.7
 Leland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 149.1/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 52.2/ 52.5
 Hetland: 25.2/ 25.2
 Solway: 87.4/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 102.0/ 102.0
 Rugby_Mind: 150.0/ 150.0
 G904: 151.8/ 151.8
 Langdon_Mind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 11.9/ 12.0
 MapleRiverND: 2.0/ 2.0
 Diver_Mind: 50.6/ 100.1
 Bison_Mind: 75.0/ 75.0
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 30.0/ 30.0
 CedarHillMND: 19.5/ 19.5
 Tatanka_MND: 180.0/ 180.0
 Culbertson: 127.5/ 127.5
 Ponoma: 40.0/ 40.0
 Ecklund: 99.0/ 99.0
 NordPrairieND: 115.5/ 115.5
 FibroMinn: 50.0/ 50.0
 Edgely: 100.7/ 100.7
 ElbowLake: 21.0/ 21.0
 Ashtabula: 597.2/ 597.2
 Luverne: 91.0/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLURDUS: 0.0/ 10.0
 WPS: 1.5/ 11.5
 Genson: 11.2/ 11.2
 RVS: -39.2/ 44.0
 GDXX4: -30.0/ 40.0
 NBCS: 22.5/ 22.5
 Baldwin: 99.0/ 99.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2276.5/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hilmant: 25.0/ 25.0
 Holcombe: 0.0/ 35.2
 Cornell: 16.0/ 30.5
 Jive: 28.0/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 489.2/ 489.2
 InverHills: 300.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.0/ 0.9
 Fenton: 0.0/ 136.0
 STP_Co: 0.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 0.0/ 372.0
 HESTPIP: 2.9/ 8.3
 CHM: 132.9/ 36.7
 FEP: 107.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 0.0/ 4.6
 BILSBY: 0.0/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 2.6/ 7.3
 GRDMDM: 100.5/ 100.5
 ERIDGE: 3.5/ 10.0
 Colvill: 0.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 150.0
 RIVERSIDE: 406.0/ 406.2
 RiverFalls: 5.0/ 20.0
 Sridge: 1.9/ 5.4
 G176: 0.0/ 10.0
 BR13: 95.4/ 287.5
 CHB3: 39.7/ 281.1
 GRDMDM: 100.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 50.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP-ST: 72.0/ 100.0
 Grant_City: 60.0/ 60.0
 HERC: 33.7/ 33.7
 STCloud: 0.0/ 6.7
 Rich_ST: 0.0/ 26.0
 Rich_VA: 0.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Blair: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MEX: 776.5
 MWSI: 471.0
 TCEX: -165.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1298.0
 Total Load: 1509.6
 Total Loss: 83.0
 Total Expt: -695.2
 Indus Load: 894.4

Minn Wiscon (725)

Avail Gens: 16141.5
 Total Gens: 10691.7
 Total Load: 10849.7
 Total Loss: 323.6
 Total Expt: -489.1

Twin Cities (725):

Avail Gens: 13927.3
 Total Gens: 9393.7
 Total Load: 8940.1
 Total Loss: 240.6
 Total Expt: 206.1
 Indus Load: 287.7

ForbesCap MVAR:

1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 182.6
 MARG: -267.4 (Out:0.0)

SHUNTS:

ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

RapidCityDC: 0.0
 Stegal DC: 34.4
 Sidney DC: 21.1
 SWING (MW): 988.1/ 1154.5
 SWING (MVAR): 448.0/ 200.0

Stink: 0.0/ 0.0
 MEX: 776.5
 MWSI: 471.0
 TCEX: -165.4
 Lakeland: 0.0/ 0.0
 Pains_Mazel: 0.0/ 0.0

Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 2472.3
 Total Load: 2234.8
 Total Loss: 72.5
 Total Expt: 165.1
 Indus Load: 1010.2

MH to SPC Total: -0.2
 IslandFallsLOOP: -54.9
 MH to SPC (230): 54.7

Boundary_Dam: 875.0/ 875.0
 Poplar_River: 315.6/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 228.9/ 290.0
 Queen_Elizbt: 0.0/ 504.6
 Corus: 80.0/ 278.0
 Nipawin: 162.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 159.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 174.3
 Total Loss: 7.3
 Total Expt: 270.0
 Indus Load: 132.2

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 264.8
 Total Loss: 50.2
 Total Expt: 333.0
 Indus Load: 141.3

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -300.0
 QMAX: 226.6
 QGEN: 36.5
 MRRG: 190.1 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 47.0
 MRRG: 118.4 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MRRG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MRRG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 1016.0
 MRRG: 684.0 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 49.4
 Dorsey230 MVAR: 755.6
 Handey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Manitoba (667)

Avail Gens: 6165.0
 Total Gens: 5030.4
 Total Load: 2345.0
 Total Loss: 289.8
 Total Expt: 2395.6
 Indus Load: 663.4

NDC_to_NAC: 0.0
 NDC_to_WPG: 3069.8
 NAC_to_WES: 270.0
 WES_to_WPG: 603.1
 WAV_to_WPG: 318.6

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 1187.8/ 1388.7
 Long_Spruce: 895.4/ 1030.6
 Kettle: 1020.1/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskeg: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 89.6
 Great_Falls: 139.3/ 139.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 1372.0
 Bipole2: 1554.0
 Bipole3: 0.0
 MHEX: 2175.2

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 3083.3
 Total Load: 0.2
 Total Loss: 13.3
 Total Expt: 3069.8
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27538.4
 Total Load: 28003.7
 Total Loss: 741.3
 Total Expt: -1276.7

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 51.2
 Total Expt: 144.9

MH to ONT Total: 220.6
 East West Ties: -193.5

Umbata Falls: 0.0/ 0.0
 Ft_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DSB: 12.2/ 0.0
 Aven_Lbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokani: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 39.4/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 594.6
 Total Load: 42.1
 Total Loss: 13.3
 Total Expt: 592.2
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 1863.6
 Total Loss: 205.7
 Total Expt: 1816.3
 Indus Load: 390.0

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 6488.5
 Total Load: 2663.5
 Total Loss: 321.8
 Total Expt: 3501.9
 Indus Load: 374.7

ND Coal Fields (711):
 Avail Gens: 6456.6
 Total Gens: 5441.4
 Total Load: 1291.9
 Total Loss: 195.3
 Total Expt: 3953.7
 Indus Load: 355.7

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 137.1
 Total Load: 543.5
 Total Loss: 37.1
 Total Expt: -443.4
 Indus Load: 0.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 910.0
 Total Load: 828.1
 Total Loss: 89.4
 Total Expt: -8.4
 Indus Load: 19.0

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.4
 QMAX: 125.0
 QGEN: 55.2
 MRRG: 69.8 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 120.0
 ShyenneSW MVAR: 0.0
 Ramsey230 MVAR: 30.0

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2291.0/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hildman: 22.0/ 22.0
 Holcombs: 35.2/ 35.2
 Connell: 25.7/ 30.5
 Jim_Falls: 28.4/ 28.4
 Riverside: 0.0/ 150.3
 Black_Dog: 373.0/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 0.0/ 177.3
 LSSTeam: 0.0/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 0.0/ 489.2
 Inver_Grills: 50.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.9/ 0.9
 Fenton: 0.0/ 136.0
 STP_Co: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 0.0/ 372.0
 HEMSTPIP: 4.6/ 8.3
 CHM: 20.7/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 32.4/ 32.4
 Hridge: 4.1/ 7.3
 Colidge: 5.6/ 10.0
 Colvill: 0.0/ 357.0
 HBR: 0.0/ 610.0
 G255: 200.0/ 200.0
 G256: 50.0/ 100.0
 RIVERSIDE: 0.0/ 406.2
 RiverFalls: 0.0/ 20.0
 Sridge: 3.0/ 5.4
 G176: 0.0/ 160.0
 BR13: 153.3/ 287.5
 CHB3: 244.0/ 281.1
 GRNDMDM: 0.0/ 100.5
 G609: 0.0/ 5.0
 NOB: 200.0/ 200.0
 UTLK: 2.5/ 5.0
 FEP-ST: 100.0/ 100.0
 Rich_City: 60.0/ 60.0
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_ST: 12.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 BigFell: 5.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MHEX: 1516.5
 MWSI: 1395.4
 TCEX: 1064.5

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1444.1
 Total Load: 1456.7
 Total Loss: 109.8
 Total Expt: -121.9
 Indus Load: 894.4

Minn Wiscon (725)

Avail Gens: 15421.3
 Total Gens: 8346.5
 Total Load: 9220.6
 Total Loss: 526.7
 Total Expt: -1408.0

Twin Cities (725):
 Avail Gens: 13325.1
 Total Gens: 6902.4
 Total Load: 7763.9
 Total Loss: 417.8
 Total Expt: -1286.1
 Indus Load: 251.4

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 310.6
 MRRG: 89.4 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 600.0
 Running230 MVAR: -20.0
 ParksLake MVAR: 0.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1197.6/ 1240.0
 Coote: 437.5/ 453.0
 Garrison: 463.6/ 480.0
 Hesket: 107.9/ 111.7
 Leland_Olds: 697.1/ 705.0
 Stanton: 186.4/ 193.0
 Yng_Cntr_SqB: 725.3/ 751.0
 Hood_Lake: 104.2/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 0.0/ 52.5
 Hetland: 0.0/ 25.2
 Solway: 47.1/ 96.2
 Lewis: 54.1/ 56.0
 BigStone: 388.5/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 104.3/ 108.0
 Rugby_Mind: 70.0/ 150.0
 G904: 60.0/ 151.8
 Langdon_Mind: 90.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 11.6/ 12.0
 MapleRiverND: 2.0/ 2.0
 Diver_Mind: 48.9/ 100.1
 Bison_Mind: 0.0/ 75.0
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 29.0/ 30.0
 CedarHillMND: 18.8/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 7.2/ 127.5
 Pomes: 40.0/ 40.5
 Ecklund: 95.6/ 99.0
 NordPrairwND: 476.5/ 540.5
 FibroMinn: 50.0/ 50.0
 Edgely: 13.7/ 100.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 448.5/ 597.2
 Luverne: 58.5/ 91.0
 Prairie: 0.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLRUST: 0.0/ 9.0
 WFS: 1.5/ 11.5
 Genson: 43.0/ 12.0
 RVS: -39.2/ 44.0
 GDCX4: -30.0/ 40.0
 NBCS: 21.7/ 22.5
 Baldwin: 95.0/ 99.0
 Glen_DC: 0.0/ 90.0
 GU_NBCSG: 6.8/ 7.0
 Drayton: 0.0/ 125.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 137.1
 Total Load: 543.5
 Total Loss: 37.1
 Total Expt: -443.4
 Indus Load: 0.0

ND Coal Fields (711):
 Avail Gens: 6456.6
 Total Gens: 5441.4
 Total Load: 1291.9
 Total Loss: 195.3
 Total Expt: 3953.7
 Indus Load: 355.7

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.4
 QMAX: 125.0
 QGEN: 55.2
 MRRG: 69.8 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 120.0
 ShyenneSW MVAR: 0.0
 Ramsey230 MVAR: 30.0

RapidCityDC: 0.0
 Stegal DC: 0.0
 Sidney DC: 21.5
 SWING (MW): 961.0/ 1154.5
 SWING (MVAR): 481.5/ 200.0

Wbl-Spex: 86. MW
 Wbl-LK_Fld: 497. MW

Lakeland: 45. MW
 Burns-Plat: 502. MW
 Burns-Plat: 502. MW
 Burns-Plat: 502. MW
 Burns-Plat: 502. MW

Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 3439.4
 Total Load: 3180.8
 Total Loss: 95.1
 Total Expt: 163.5
 Indus Load: 1010.2

MH to SPC Total: -0.5
 IslandFallsLOOP: -53.0
 MH to SPC (230): 52.5

Boundary_Dam: 872.0/ 875.0
 Poplar_River: 615.3/ 630.0
 REDUC: 0.0/ 26.4
 SHAND: 298.0/ 305.0
 EB_Campbell: 210.0/ 290.0
 Queen_Elizbt: 441.0/ 504.6
 Corus: 215.9/ 278.0
 Nipawin: 249.2/ 255.0
 Island_Falls: 87.0/ 101.0
 Meridian: 197.4/ 235.0
 Coteau_Creek: 146.4/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 58.4/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 28.7/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.5/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 195.8
 Total Loss: 7.1
 Total Expt: 248.7
 Indus Load: 127.9

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 50.7
 Total Expt: 261.6
 Indus Load: 136.7

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -230.0
 QMAX: 195.9
 QGEN: -14.9
 MARG: -215.1 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 25.0
 MARG: 143.0 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: 0.1
 MARG: 94.9 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: 0.1
 MARG: 149.9 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 1294.5
 MARG: 405.5 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.2
 Dorsey230 MVAR: 755.6
 Handey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6165.0
 Total Gens: 5376.3
 Total Load: 3350.1
 Total Loss: 350.0
 Total Expt: 1676.2
 Indus Load: 641.8

NDC_to_NAC: 0.0
 NDC_to_WPG: 3411.6
 NAC_to_WES: 248.7
 WES_to_WPG: 510.8
 WVV_to_WPG: 293.5

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 1290.7/ 1388.7
 Long_Spruce: 989.7/ 1030.6
 Kettle: 1148.8/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 89.6
 Great_Falls: 136.3/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Leon: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 1516.0
 Bipole2: 1718.0
 Bipole3: 0.0
 MHX: 1457.6

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 3429.1
 Total Load: 0.3
 Total Loss: 17.3
 Total Expt: 3411.6
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27544.5
 Total Load: 28003.7
 Total Loss: 747.1
 Total Expt: -1276.5

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 50.5
 Total Expt: 145.6

MH to ONT Total: 219.1
 East West Ties: -192.4

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DSB: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valerie_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 594.6
 Total Load: 67.9
 Total Loss: 14.1
 Total Expt: 512.6
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 2750.5
 Total Loss: 260.8
 Total Expt: 2758.3
 Indus Load: 377.3

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 7457.8
 Total Load: 3805.4
 Total Loss: 362.8
 Total Expt: 3288.3
 Indus Load: 0.0

NDEX_AC: 1670.0

CUDC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: 175.2

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -87.0
 QMAX: 125.8
 QGEN: 51.0
 MARG: 74.7 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 160.0
 ShayenneSW MVAR: 160.0
 Ramsey230 MVAR: 60.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 1226.1
 Total Load: 1332.4
 Total Loss: 130.2
 Total Expt: -237.4
 Indus Load: 0.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1290.0/ 1290.0
 Coote: 453.0/ 453.0
 Garrison: 480.0/ 480.0
 Hesket: 111.7/ 111.7
 Leland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 149.1/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 52.5/ 52.5
 Hetland: 0.0/ 25.2
 Solway: 96.2/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 108.0/ 108.0
 Rugby_Mind: 70.0/ 150.0
 G904: 60.0/ 151.8
 Langdon_Mind: 90.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 12.0/ 12.0
 MapleRiverND: 2.0/ 2.0
 Diver_Mind: 50.6/ 100.1
 Bison_Mind: 75.0/ 75.0
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 30.0/ 30.0
 CedarHillMND: 19.5/ 19.5
 Tatanka_MND: 179.5/ 180.0
 Culbertson: 127.5/ 127.5
 Pomes: 40.0/ 40.0
 Ecklund: 99.0/ 99.0
 NordPrairieND: 503.4/ 540.5
 FibroMinn: 50.0/ 50.0
 Edgely: 100.7/ 100.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 597.2/ 597.2
 Luverne: 91.0/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLUDST: 0.0/ 9.0
 HPS: 1.5/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 GDXX4: -30.0/ 40.0
 NBGS: 22.5/ 22.5
 Baldwin: 30.0/ 30.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

ND Coal Fields (711):
 Avail Gens: 6456.6
 Total Gens: 6045.5
 Total Load: 1688.1
 Total Loss: 198.8
 Total Expt: 4158.2
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 186.2
 Total Load: 784.9
 Total Loss: 33.8
 Total Expt: -632.5
 Indus Load: 0.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2242.7/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hilmant: 22.0/ 22.0
 Holcomer: 35.2/ 35.2
 Cornell: 31.3/ 30.5
 Jivefalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 17.3/ 17.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 489.2/ 489.2
 Inver_Hills: 250.0/ 300.0
 White: 318.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 1.7/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 ERIDGE: 25.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 406.0/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 0.7/ 60.0
 BR13: 54.9/ 287.5
 CHB3: 23.1/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 UTLK: 0.9/ 5.0
 FEF_ST: 100.0/ 100.0
 Grant_City: 30.7/ 60.0
 HERC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Hart_ST: 26.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Birefall: 0.0/ 7.7
 GRANFLCY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MWEX: 1053.1
 MWSI: 897.8
 TCEX: 577.3

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1229.4
 Total Load: 1658.1
 Total Loss: 81.2
 Total Expt: -510.5
 Indus Load: 894.4

Minn Wiscon (725)

Avail Gens: 15421.3
 Total Gens: 11343.8
 Total Load: 13202.9
 Total Loss: 406.4
 Total Expt: -2272.8

Twin Cities (725):
 Avail Gens: 1325.1
 Total Gens: 10114.4
 Total Load: 11544.8
 Total Loss: 325.1
 Total Expt: -1762.3
 Indus Load: 291.6

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 190.8
 MARG: 209.2 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

RapidCityDC: 0.0
 Stegal DC: 106.7
 Sidney DC: 20.9
 SWING (MW): 976.9/ 1154.5
 SWING (MVAR): 471.7/ 200.0

Brk-White: 49. MK

Nbl-Spex: 116. MK

Mbl-LK_Fld: 135. MK

NM CR: 79. MK

PL3-L3-4-11M

PL3-L3-4-11M

PL3-L3-4-11M

PL3-L3-4-11M

PL3-L3-4-11M

PL3-L3-4-11M

Burn-Plat: 154. MK

Burn-Plat: 154. MK

Burn-Plat: 154. MK

Burn-Plat: 154. MK

Burn-Plat: 154. MK

Burn-Plat: 154. MK

Burn-Plat: 154. MK

Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 3092.9
 Total Load: 3169.8
 Total Loss: 95.8
 Total Expt: -172.8
 Indus Load: 1010.2

MH to SPC Total: 5.9
 IslandFallsLOOP: -54.9
 MH to SPC (230): 60.8

Boundary_Dam: 646.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 195.4/ 290.0
 Queen_Elizbt: 290.0/ 504.6
 Corus: 222.0/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 202.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 193.0
 Total Loss: 7.2
 Total Expt: 251.4
 Indus Load: 126.1

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 390.2
 Total Loss: 45.1
 Total Expt: 212.6
 Indus Load: 155.4

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -230.0
 QMAX: 195.9
 QGEN: 95.2
 MRRG: 102.7 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 166.0
 QGEN: -76.5
 MRRG: -59.5 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MRRG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: 0.0
 MRRG: 150.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 109.6
 MRRG: 1590.4 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.2
 Dorsey230 MVAR: 155.0
 Handey230 MVAR: 300.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon94 MVAR: 0.0

Mani toba (667)

Avail Gens: 6165.0
 Total Gens: 2692.0
 Total Load: 3350.0
 Total Loss: 158.8
 Total Expt: -816.8
 Indus Load: 653.5

NDC_to_NAC: 0.0
 NDC_to_WPG: 742.4
 NAC_to_WES: 251.4
 WES_to_WPG: 458.2
 WRV_to_WPG: 639.6

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 282.0/ 1319.7
 Long_Spruce: 216.2/ 1030.6
 Kettle: 246.7/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 89.6
 Great_Falls: 139.3/ 139.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 344.0
 Bipole2: 390.0
 Bipole3: 0.0
 MHX: -698.5

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 744.9
 Total Load: 0.3
 Total Loss: 2.2
 Total Expt: 742.4
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27544.5
 Total Load: 28003.7
 Total Loss: 719.1
 Total Expt: -1249.0

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 36.5
 Total Expt: 159.4

MH to ONT Total: -124.2
 East West Ties: -112.5

Umbata Falls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Lbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Caim_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fis: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 Whitelog_GS: 57.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 594.6
 Total Load: 66.9
 Total Loss: 12.4
 Total Expt: 515.3
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 2699.6
 Total Loss: 92.0
 Total Expt: -2538.5
 Indus Load: 372.0

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 5830.2
 Total Load: 3801.0
 Total Loss: 234.1
 Total Expt: 1793.8
 Indus Load: 0.0

NDEX_AC: 175.6
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: -44.0

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -87.0
 QMAX: 125.8
 QGEN: -87.0
 MRRG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 120.0
 ShayenneSW MVAR: 120.0
 Ramsey230 MVAR: 30.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 856.4
 Total Load: 1332.4
 Total Loss: 63.6
 Total Expt: -540.5
 Indus Load: 0.0

Montecello: 619.1/ 568.0
 PrairieisInd: 1138.0/ 1044.0
 King: 605.0/ 555.0
 Sherco: 244.6/ 2291.0
 French_IsInd: 30.5/ 28.0
 Red_Wing: 24.4/ 22.4
 Hilmant: 24.0/ 22.0
 Holcombe: 38.4/ 35.2
 Cornell: 34.1/ 30.5
 JimFalls: 61.6/ 56.3
 Riverside: 163.8/ 150.3
 Black_Dog: 598.0/ 548.6
 BFTG: 24.3/ 22.3
 LSP_CT: 173.3/ 177.3
 LSSTeam: 115.8/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 533.2/ 489.2
 InverFalls: 272.5/ 300.0
 White: 346.6/ 322.0
 WhiteG: 0.9/ 0.9
 Fenton: 74.1/ 136.0
 STP_Co: 27.3/ 25.0
 BFT: 55.2/ 50.5
 MEC: 382.6/ 372.0
 CHE: 8.1/ 8.7
 HESTPIP: 1.9/ 8.3
 FEP: 163.5/ 150.0
 Janesville: 0.0/ 5.0
 FLTYCD: 5.0/ 4.6
 BLSBY: 2.6/ 2.4
 KEYCT: 36.0/ 32.4
 Hridge: 1.6/ 7.3
 ERIDGE: 2.2/ 10.0
 Colvill: 389.1/ 357.0
 HBR: 664.9/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 442.5/ 406.2
 RiverFalls: 13.1/ 20.0
 Sridge: 1.2/ 5.4
 G176: 0.5/ 10.0
 BR13: 59.8/ 287.5
 CHB3: 25.2/ 281.1
 GRNDMD: 109.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 UTLK: 1.0/ 5.0
 FEP-ST: 109.0/ 100.0
 Grant_City: 33.5/ 60.5
 HERC: 36.7/ 33.7
 STCloud: 7.3/ 6.7
 Main_ST: 26.3/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 BigFalls: 8.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newville: 0.0/ 8.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 257.0
 Total Load: 784.9
 Total Loss: 26.7
 Total Expt: -556.6
 Indus Load: 0.0

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Montecello: 619.1/ 568.0
 PrairieisInd: 1138.0/ 1044.0
 King: 605.0/ 555.0
 Sherco: 244.6/ 2291.0
 French_IsInd: 30.5/ 28.0
 Red_Wing: 24.4/ 22.4
 Hilmant: 24.0/ 22.0
 Holcombe: 38.4/ 35.2
 Cornell: 34.1/ 30.5
 JimFalls: 61.6/ 56.3
 Riverside: 163.8/ 150.3
 Black_Dog: 598.0/ 548.6
 BFTG: 24.3/ 22.3
 LSP_CT: 173.3/ 177.3
 LSSTeam: 115.8/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 533.2/ 489.2
 InverFalls: 272.5/ 300.0
 White: 346.6/ 322.0
 WhiteG: 0.9/ 0.9
 Fenton: 74.1/ 136.0
 STP_Co: 27.3/ 25.0
 BFT: 55.2/ 50.5
 MEC: 382.6/ 372.0
 CHE: 8.1/ 8.7
 HESTPIP: 1.9/ 8.3
 FEP: 163.5/ 150.0
 Janesville: 0.0/ 5.0
 FLTYCD: 5.0/ 4.6
 BLSBY: 2.6/ 2.4
 KEYCT: 36.0/ 32.4
 Hridge: 1.6/ 7.3
 ERIDGE: 2.2/ 10.0
 Colvill: 389.1/ 357.0
 HBR: 664.9/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 100.0
 RIVERSIDE: 442.5/ 406.2
 RiverFalls: 13.1/ 20.0
 Sridge: 1.2/ 5.4
 G176: 0.5/ 10.0
 BR13: 59.8/ 287.5
 CHB3: 25.2/ 281.1
 GRNDMD: 109.5/ 100.5
 G609: 0.0/ 5.0
 NOB: 0.0/ 200.0
 UTLK: 1.0/ 5.0
 FEP-ST: 109.0/ 100.0
 Grant_City: 33.5/ 60.5
 HERC: 36.7/ 33.7
 STCloud: 7.3/ 6.7
 Main_ST: 26.3/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 BigFalls: 8.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newville: 0.0/ 8.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Antelope: 727.5/ 960.0
 Coal_Creek: 1141.3/ 1240.0
 Coote: 419.3/ 453.0
 Garrison: 375.2/ 480.0
 Hesket: 92.2/ 111.7
 Leland_Olds: 547.2/ 705.0
 Stanton: 150.5/ 193.0
 Yng_Cntr_SqB: 644.5/ 751.0
 Hood_Lake: 142.3/ 149.1
 Williston: 0.0/ 10.0
 Jameson: 40.9/ 52.5
 Hetland: 0.0/ 25.2
 Solway: 78.5/ 96.2
 Lewis: 46.7/ 56.0
 BigStone: 488.7/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 100.9/ 108.0
 Rugby_Mind: 110.1/ 150.0
 G904: 140.1/ 151.8
 Langdon_Mind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 2.2/ 12.0
 MapleRiverND: 0.4/ 2.0
 Bison_Mind: 18.7/ 100.1
 Spirit_Wind: 49.0/ 102.6
 DiamondHillND: 5.6/ 30.0
 CedarHillMND: 3.6/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 75.2/ 127.5
 Pomes: 8.0/ 40.5
 Ecklund: 18.5/ 99.0
 NordPrairND: 22.4/ 115.5
 FibroMinn: 50.0/ 50.0
 Edgely: 91.2/ 100.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 45.6/ 229.2
 Luverne: 27.0/ 91.0
 Frairie: 0.0/ 4.0
 AlexLDM: 0.0/ 7.8
 DLUDS1: 0.0/ 9.0
 HPS: 0.3/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 DGCX4: -30.0/ 40.0
 NBGS: 15.4/ 22.5
 Baldwin: 18.0/ 99.0
 Glen_DC: 74.7/ 90.0
 GU_NBCSG: 4.7/ 7.0
 Drayton: 0.0/ 125.0

ND Coal Fields (711):
 Avail Gens: 6456.6
 Total Gens: 4716.8
 Total Load: 1689.7
 Total Loss: 141.8
 Total Expt: 2890.9
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 257.0
 Total Load: 784.9
 Total Loss: 26.7
 Total Expt: -556.6
 Indus Load: 0.0

NDEX_AC: 175.6
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: -44.0

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MRRG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -87.0
 QMAX: 125.8
 QGEN: -87.0
 MRRG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 120.0
 ShayenneSW MVAR: 120.0
 Ramsey230 MVAR: 30.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 856.4
 Total Load: 1332.4
 Total Loss: 63.6
 Total Expt: -540.5
 Indus Load: 0.0

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

RapidCityDC: 0.0
 Stegal DC: 106.7
 Sidney DC: 20.9
 SWING (MW): 974.4/ 1154.5
 SWING (MVAR): 470.2/ 200.0

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4. MW

Wilt-Bow: NOT FOUND
 Lept-Akly: 47. MW
 Aujab-Hubd: 5. MW

Inn-IngR: 39. MW
 Alex-Dgls: 17. MW
 GLCH-WLM: 16. MW
 Kerk-kert: 8. MW
 Mops-GrnF: 88. MW
 Camb-GrnF: 4

Saskatchewan (672)

Avail Gens: 4278.7
 Total Gens: 3440.4
 Total Load: 3180.8
 Total Loss: 96.6
 Total Expt: 163.0
 Indus Load: 1010.2

MH to SPC Total: 1.5
 IslandFallsLOOP: -53.0
 MH to SPC (230): 54.4

Boundary_Dam: 873.0/ 875.0
 Poplar_River: 615.3/ 630.0
 REDUC: 10.3/ 26.4
 SHAND: 298.0/ 305.0
 EB_Campbell: 210.0/ 290.0
 Queen_Elizabeth: 441.0/ 504.6
 Corus: 215.3/ 278.0
 Nipawin: 249.2/ 255.0
 Island_Falls: 87.0/ 101.0
 Meridian: 197.4/ 235.0
 Coteau_Creek: 146.4/ 183.0
 ERMIn: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 58.4/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 28.7/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.5/ 21.8

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 195.8
 Total Loss: 7.1
 Total Expt: 248.8
 Indus Load: 127.9

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 335.6
 Total Loss: 52.1
 Total Expt: 260.2
 Indus Load: 136.7

Grand_Rapids MVAR:
 4 of 4 machines
 OMIn: -230.0
 QMAX: 195.9
 QGEN: 105.9
 MARG: 89.8 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIn: -136.0
 QMAX: 165.0
 QGEN: 24.9
 MARG: 141.1 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIn: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIn: -20.0
 QMAX: 150.0
 QGEN: 0.0
 MARG: 150.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIn: -895.0
 QMAX: 1700.0
 QGEN: 1441.5
 MARG: 258.5 (Out:160.0)

Riel_Sync MVAR:
 0 of 0 machines
 OMIn: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.2
 Dorsey230 MVAR: 755.6
 Handey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon94 MVAR: 0.0

Manitoba (667)

Avail Gens: 6165.0
 Total Gens: 5507.4
 Total Load: 3350.1
 Total Loss: 376.9
 Total Expt: 1780.4
 Indus Load: 641.8

NDC_to_NAC: 0.0
 NDC_to_WPG: 3541.3
 NAC_to_WES: 248.8
 WES_to_WPG: 507.5
 WAV_to_WPG: 291.7

Keeyask: 0.0/ 0.0
 Conawapa: 0.0/ 0.0
 Limestone: 1337.0/ 1388.7
 Long_Spruce: 1025.2/ 1030.6
 Kettle: 1198.1/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.3/ 223.0
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 89.6
 Great_Falls: 139.3/ 139.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 1572.0
 Bipole2: 1778.0
 Bipole3: 0.0
 MHEX: 1558.2

NORTHERN COLLECTOR (700):
 Avail Gens: 3612.5
 Total Gens: 3560.3
 Total Load: 0.3
 Total Loss: 18.7
 Total Expt: 3541.3
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40502.0
 Total Gens: 27544.5
 Total Load: 28003.7
 Total Loss: 747.3
 Total Expt: -1276.6

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 847.9
 Total Load: 659.6
 Total Loss: 50.7
 Total Expt: 145.3

MH to ONT Total: 220.8
 East West Ties: -194.2

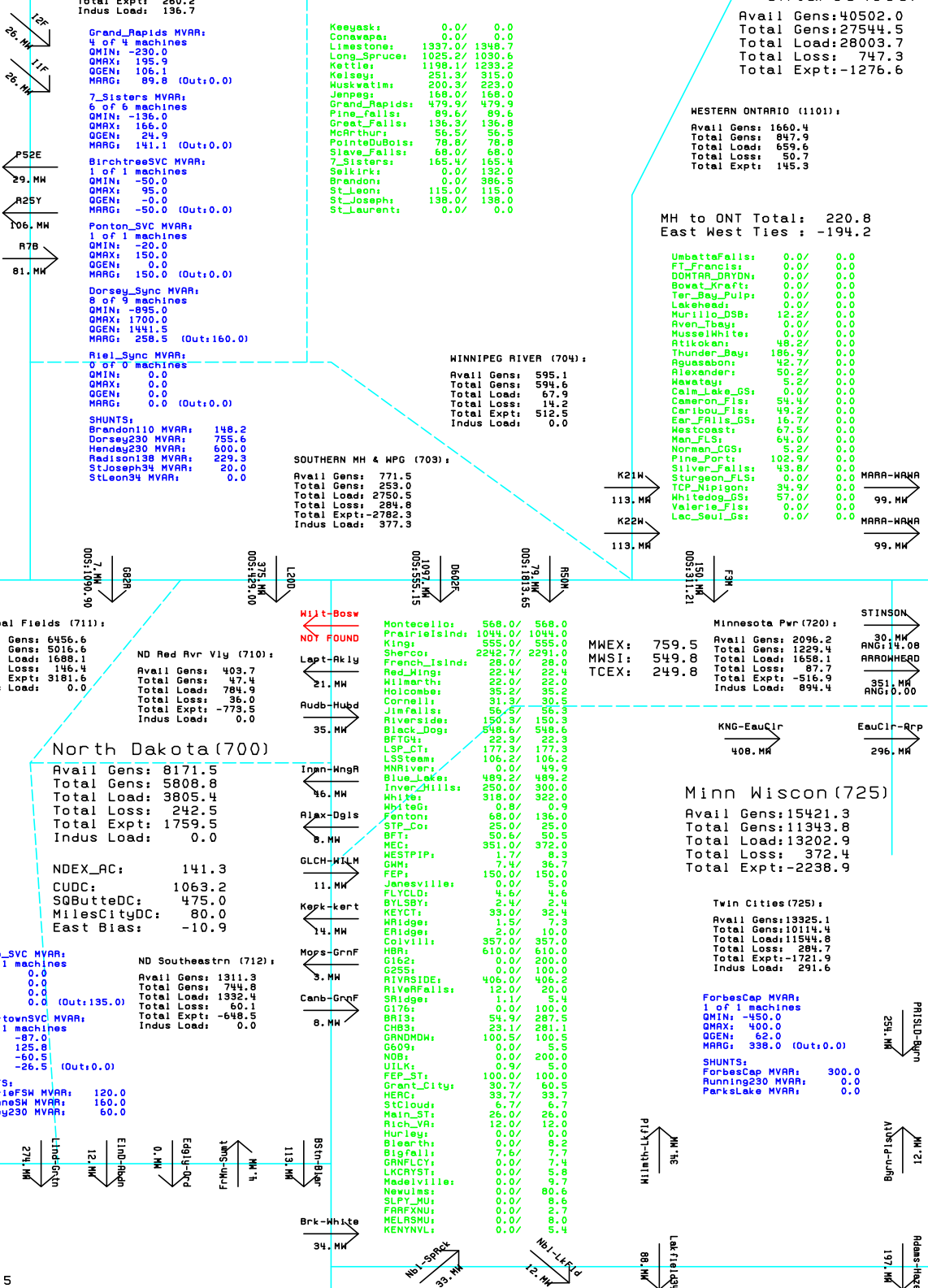
Umbata Falls: 0.0/ 0.0
 Ft_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 54.4/ 0.0
 Caribou_Fis: 49.2/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_FLS: 64.0/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_FLS: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 57.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 595.1
 Total Gens: 594.6
 Total Load: 67.9
 Total Loss: 14.2
 Total Expt: 512.5
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 2750.5
 Total Loss: 284.8
 Total Expt: 272.3
 Indus Load: 377.3



ND Coal Fields (711):

Avail Gens: 6456.6
 Total Gens: 5016.6
 Total Load: 1688.1
 Total Loss: 146.4
 Total Expt: 3181.6
 Indus Load: 0.0

ND Red Avr Vly (710):

Avail Gens: 403.7
 Total Gens: 47.4
 Total Load: 784.9
 Total Loss: 36.0
 Total Expt: -773.5
 Indus Load: 0.0

North Dakota (700)

Avail Gens: 8171.5
 Total Gens: 5808.8
 Total Load: 3805.4
 Total Loss: 242.5
 Total Expt: 1759.5
 Indus Load: 0.0

NDEX_AC:

CUDC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 80.0
 East Bias: -10.9

Fargo_SVC MVAR:

0 of 1 machines
 OMIn: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:

1 of 1 machines
 OMIn: -87.0
 QMAX: 125.8
 QGEN: -60.5
 MARG: -26.5 (Out:0.0)

ND Southeastrn (712):

Avail Gens: 1311.3
 Total Gens: 744.8
 Total Load: 1332.4
 Total Loss: 60.1
 Total Expt: -648.5
 Indus Load: 0.0

ShUNTS:

PrairieFSH MVAR: 120.0
 ShayenneSW MVAR: 160.0
 Ramsey230 MVAR: 60.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1240.0/ 1240.0
 Coquette: 453.0/ 453.0
 Garrison: 294.9/ 480.0
 Hesket: 68.6/ 111.7
 Leland_Olds: 433.2/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 107.5/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 37.9/ 52.5
 Hetland: 0.0/ 25.2
 Solway: 47.4/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 356.2/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 108.0/ 108.0
 Rugby_Mind: 70.0/ 150.0
 G904: 60.0/ 151.8
 Langdon_Mind: 0.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 0.0/ 12.0
 MapleRiverND: 1.4/ 2.0
 Diver_Mind: 50.6/ 100.1
 Bison_Mind: 0.0/ 75.0
 Spirit_Wind: 0.0/ 102.6
 DiamondHillND: 0.0/ 30.0
 CedarHillMND: 0.0/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 127.5/ 127.5
 Pomes: 0.0/ 40.5
 Ecklund: 0.0/ 99.0
 NordPrairieND: 115.5/ 115.5
 FibroMinn: 0.0/ 50.0
 Edgely: 95.8/ 100.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 533.3/ 597.2
 Luverne: 65.6/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLRUSTS: 0.0/ 9.0
 HPS: 1.1/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 DGX4: -30.0/ 40.0
 NBCS: 7.5/ 22.5
 Baldwin: 30.0/ 30.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

RapidCityDC: 0.0
 Stegal DC: 106.7
 Sidney DC: 20.9
 SWING (MW): 975.3/ 1154.5
 SWING (MVAR): 474.7/ 200.0

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2242.7/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hilman: 22.0/ 22.0
 Holcom: 35.2/ 35.2
 Cornell: 31.3/ 30.5
 Jivefalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 489.2/ 489.2
 Jivefalls: 250.0/ 300.0
 White: 318.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 1.7/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 CRIDGE: 25.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 0.0/ 200.0
 G255: 0.0/ 120.0
 RIVERSIDE: 406.0/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 0.0/ 7.1
 BR13: 54.9/ 287.5
 CHB3: 23.1/ 281.1
 GRNDMD: 100.5/ 100.5
 G609: 0.0/ 5.5
 NOB: 0.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 30.7/ 60.5
 HEAC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Hart_ST: 26.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Blair: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSHU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MWEX: 759.5
 MWSI: 549.0
 TCEX: 249.0

Minnesota Pwr (720):
 Avail Gens: 2096.2
 Total Gens: 1229.4
 Total Load: 1658.1
 Total Loss: 87.7
 Total Expt: -516.9
 Indus Load: 894.4

Minn Wiscon (725)

Avail Gens: 15421.3
 Total Gens: 11343.8
 Total Load: 13202.9
 Total Loss: 372.4
 Total Expt: -2238.9

Twin Cities (725):
 Avail Gens: 1325.1
 Total Gens: 10114.4
 Total Load: 11544.8
 Total Loss: 284.7
 Total Expt: -1721.9
 Indus Load: 291.6

ForbesCap MVAR:
 1 of 1 machines
 OMIn: -450.0
 QMAX: 400.0
 QGEN: 62.0
 MARG: 338.0 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

Saskatchewan (672)

Avail Gens: 4684.8
 Total Gens: 4008.9
 Total Load: 3753.6
 Total Loss: 89.4
 Total Expt: 165.9
 Indus Load: 1361.4

MH to SPC Total: -0.3
 IslandFallsLOOP: -58.9
 MH to SPC (230): 58.6

Boundary_Dam: 875.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 11.7/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 280.9/ 290.0
 Queen_Elizbt: 414.1/ 504.6
 Corus: 245.8/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 93.7/ 101.0
 Meridian: 217.6/ 235.0
 Coteau_Creek: 166.1/ 183.0
 ERMIn: 41.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 66.2/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 32.6/ 40.0
 Success: 0.0/ 30.0
 BRADA: 41.0/ 141.0
 CYPUSU: 9.6/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 451.4
 Total Load: 265.3
 Total Loss: 7.4
 Total Expt: 178.6
 Indus Load: 139.7

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 456.2
 Total Loss: 39.4
 Total Expt: 142.3
 Indus Load: 148.5

Grand_Rapids MVAR:
 4 of 4 machines
 QMIN: -160.0
 QMAX: 85.2
 QGEN: 85.2
 MARG: 84.9 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 QMIN: -136.0
 QMAX: 165.0
 QGEN: 105.7
 MARG: 65.3 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 QMIN: -50.0
 QMAX: 95.0
 QGEN: 0.0
 MARG: 95.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 QMIN: -20.0
 QMAX: 150.0
 QGEN: 0.0
 MARG: 150.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 QMIN: -895.0
 QMAX: 1700.0
 QGEN: 419.9
 MARG: 1280.1 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 QMIN: -548.0
 QMAX: 1000.0
 QGEN: 407.2
 MARG: 592.8 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.0
 Dorsey230 MVAR: 355.0
 Riel230 MVAR: 500.0
 Henday230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6874.0
 Total Gens: 5222.3
 Total Load: 3579.0
 Total Loss: 258.5
 Total Expt: 1384.8
 Indus Load: 760.0

NDC_to_NAC: 0.0
 NDC_to_WPG: 3240.1
 NAC_to_WES: 178.6
 WES_to_WPG: 321.2
 WVV_to_WPG: 306.4

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 1156.5/ 1388.7
 Long_Spruce: 1028.0/ 1030.6
 Kettle: 1077.4/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 103.6/ 103.6
 Great_Falls: 136.3/ 136.8
 McArthur: 56.0/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Leons: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 994.0
 Bipole2: 1072.0
 Bipole3: 1068.0
 MHEX: 1164.1

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 3261.9
 Total Load: 0.0
 Total Loss: 21.5
 Total Expt: 3240.1
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 28695.7
 Total Load: 29131.5
 Total Loss: 786.1
 Total Expt: -1291.1

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 56.0
 Total Expt: 165.9

MH to ONT Total: 221.0
 East West Ties: -214.8

UmbataFalls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 44.7/ 0.0
 Caribou_Fis: 40.1/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_FLS: 39.2/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Fort: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_FLS: 0.0/ 0.0
 TCP_Nipigon: 39.9/ 0.0
 Whitelog_GS: 57.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 609.1
 Total Load: 66.3
 Total Loss: 1.4
 Total Expt: 527.3
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 271.5
 Total Gens: 253.0
 Total Load: 2780.8
 Total Loss: 175.7
 Total Expt: -2709.5
 Indus Load: 411.8

North Dakota (700)

Avail Gens: 8841.6
 Total Gens: 6304.4
 Total Load: 4315.5
 Total Loss: 238.7
 Total Expt: 1748.7
 Indus Load: 0.0

NDEX_AC: 123.5
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 87.0
 East Bias: 16.4

Fargo_SVC MVAR:
 0 of 1 machines
 QMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 QMIN: -86.0
 QMAX: 124.4
 QGEN: -86.0
 MARG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 40.0
 ShayenneSW MVAR: 80.0
 Ramsey230 MVAR: 30.0

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 536.9
 Total Load: 1434.0
 Total Loss: 49.8
 Total Expt: -947.9
 Indus Load: 0.0

Montecello: 568.0/ 568.0
 PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hilmant: 22.0/ 22.0
 Holcombs: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 JimFalls: 56.5/ 56.5
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 49.9/ 49.9
 Blue_Lake: 316.9/ 489.2
 InverHills: 300.0/ 300.0
 White: 105.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HEMSTPIP: 1.6/ 8.3
 CHM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 1.5/ 7.3
 Eridge: 2.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 200.0/ 200.0
 G255: 100.0/ 100.0
 RIVERSIDE: 406.2/ 406.2
 RiverFalls: 12.0/ 20.0
 Sridge: 1.1/ 5.4
 G176: 160.5/ 160.5
 BR13: 95.9/ 287.5
 CHB3: 173.3/ 281.1
 GRNDMDH: 100.5/ 100.5
 G609: 5.0/ 5.0
 NOB: 200.0/ 200.0
 UTLK: 0.9/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 60.5/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_VA: 26.0/ 26.0
 Hurley: 0.0/ 0.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 BigFalls: 0.0/ 7.7
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madelville: 0.0/ 9.7
 Newell: 0.0/ 30.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 8.0/ 8.0
 KENYNU: 0.0/ 5.4

MEX: 783.1
 MWSI: 318.8
 TCEX: -311.3

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1524.4
 Total Load: 1940.9
 Total Loss: 78.1
 Total Expt: -477.2
 Indus Load: 1117.4

Minn Wisconsin (725)

Avail Gens: 16189.3
 Total Gens: 12577.3
 Total Load: 14280.3
 Total Loss: 397.5
 Total Expt: -2108.0

Twin Cities (725):
 Avail Gens: 13975.1
 Total Gens: 11094.9
 Total Load: 12399.4
 Total Loss: 319.3
 Total Expt: -1630.9
 Indus Load: 289.7

ForbesCap MVAR:
 1 of 1 machines
 QMIN: -450.0
 QMAX: 400.0
 QGEN: 87.0
 MARG: 313.0 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

Antelope: 902.0/ 960.0
 Coal_Creek: 1121.0/ 1240.0
 Coote: 449.5/ 453.0
 Garrison: 465.2/ 480.0
 Hesket: 95.7/ 111.7
 Leland_Olds: 700.0/ 705.0
 Stanton: 187.1/ 193.0
 Yng_Cntr_SqB: 642.0/ 751.0
 Hood_Lake: 107.9/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 33.9/ 52.5
 Hetland: 16.4/ 25.2
 Solway: 63.5/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 210.0/ 494.0
 Miles_City: 25.3/ 26.0
 Fort_Peck: 108.0/ 108.0
 Rugby_Mind: 150.0/ 150.0
 G904: 150.0/ 151.8
 Langdon_Mind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 2.4/ 12.0
 MapleRiverND: 0.3/ 2.0
 Diver_Mind: 20.0/ 100.1
 Bison_Mind: 15.0/ 75.0
 Spirit_Wind: 75.0/ 102.6
 DiamondHillND: 8.0/ 30.0
 CedarHillMND: 3.9/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 80.5/ 127.5
 Pomes: 6.1/ 40.5
 Ecklund: 19.8/ 99.0
 NordPrairND: 24.0/ 115.5
 FibroMinn: 37.9/ 50.0
 Edgely: 3.2/ 13.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 8.0/ 229.2
 Luverne: 8.3/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 5.9/ 7.8
 DLUDST: 6.8/ 9.0
 WFS: 7.8/ 11.5
 Gens: 9.2/ 12.2
 RVS: -39.2/ 44.0
 GDCX4: -30.0/ 40.0
 NBGS: 16.5/ 22.5
 Baldwin: 19.8/ 99.0
 Glen_DC: 87.0/ 90.0
 GU_NBCSG: 5.0/ 7.0
 Drayton: 0.0/ 125.0

ND Coal Fields (711):
 Avail Gens: 7126.6
 Total Gens: 5521.5
 Total Load: 2020.4
 Total Loss: 145.8
 Total Expt: 3354.8
 Indus Load: 0.0

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 246.0
 Total Load: 861.1
 Total Loss: 49.1
 Total Expt: -658.2
 Indus Load: 0.0

Wilt-Bow
 NOT FOUND
 Lept-Akly
 21. MH
 Audb-Hubd
 25. MH
 Inman-WngR
 9. MH
 Alax-Dgls
 56. MH
 GLCH-WILM
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 Kerp-kert
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 Mops-GrnF
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 Camb-GrnF
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RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 970.2/ 1154.5
 SWING (MVAR): 496.8/ 200.0

RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 970.2/ 1154.5
 SWING (MVAR): 496.8/ 200.0

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 Stegal DC: 107.6
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 Sidney DC: 20.8
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 SWING (MVAR): 496.8/ 200.0

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 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 970.2/ 1154.5
 SWING (MVAR): 496.8/ 200.0

RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 970.2/ 1154.5
 SWING (MVAR): 496.8/ 200.0

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 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 970.2/ 1154.5
 SWING (MVAR): 496.8/ 200.0

RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 970.2/ 1154.5
 SWING (MVAR): 496.8/ 200.0

Saskatchewan (672)

Avail Gens: 4684.8
Total Gens: 2896.2
Total Load: 2655.6
Total Loss: 73.5
Total Expt: 167.1
Indus Load: 1361.4

MH to SPC Total: -3.4
IslandFallsLOOP: -54.5
MH to SPC (230): 51.1

Boundary_Dam: 875.0/ 875.0
Poplar_River: 630.0/ 630.0
REDUC: 10.6/ 26.4
SHAND: 305.0/ 305.0
EB_Campbell: 192.8/ 290.0
Queen_Elizb2: 162.0/ 504.6
Corus: 80.0/ 278.0
Nipawin: 255.0/ 255.0
Island_Falls: 89.0/ 101.0
Meridian: 159.0/ 235.0
Coteau_Creek: 100.0/ 183.0
ERMIN: 0.0/ 94.0
Lands: 0.0/ 76.5
Meadow_Lake: 80.0/ 43.0
CentennialHd: 59.8/ 149.4
RSHLD: 0.0/ 0.0
BPLNS: 29.4/ 40.0
Success: 0.0/ 30.0
BRADA: 0.0/ 141.0
CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
Avail Gens: 537.9
Total Gens: 45.4
Total Load: 233.9
Total Loss: 7.4
Total Expt: 210.1
Indus Load: 193.4

WESTERN MAN (702):
Avail Gens: 647.9
Total Gens: 647.9
Total Load: 352.9
Total Loss: 37.9
Total Expt: 257.1
Indus Load: 143.8

Grand_Rapids MVAR:
4 of 4 machines
OMIN: -160.0
QMAX: 165.2
QGEN: 4.1
MARG: 124.1 (Out:0.0)

7_Sisters MVAR:
6 of 6 machines
OMIN: -136.0
QMAX: 165.0
QGEN: 77.7
MARG: 88.3 (Out:0.0)

BirchtreeSVC MVAR:
1 of 1 machines
OMIN: -50.0
QMAX: 1700.0
QGEN: 0.0
MARG: 95.0 (Out:0.0)

Ponton_SVC MVAR:
1 of 1 machines
OMIN: -20.0
QMAX: 150.0
QGEN: -0.0
MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
8 of 9 machines
OMIN: -895.0
QMAX: 1700.0
QGEN: 207.3
MARG: 1492.7 (Out:160.0)

Riel_Sync MVAR:
4 of 4 machines
OMIN: -548.0
QMAX: 1000.0
QGEN: 481.2
MARG: 518.8 (Out:0.0)

SHUNTS:
Brandon110 MVAR: 98.8
Dorsey230 MVAR: 355.0
Riel230 MVAR: 200.0
Henday230 MVAR: 600.0
Radison138 MVAR: 229.3
StJoseph34 MVAR: 20.0
StLeon34 MVAR: 0.0

Manitoba (667)

Avail Gens: 6874.0
Total Gens: 5135.4
Total Load: 2505.0
Total Loss: 241.5
Total Expt: 2388.9
Indus Load: 736.1

NDC_to_NAC: 0.0
NDC_to_WPG: 3154.6
NAC_to_WES: 210.1
WES_to_WPG: 470.5
WVW_to_WPG: 333.9

Keeyask: 0.0/ 695.1
Conawapa: 0.0/ 0.0
Limestone: 1125.9/ 1388.7
Long_Spruce: 1025.3/ 1030.6
Kettle: 1022.8/ 1233.2
Kelsey: 251.3/ 315.0
Muskeg: 200.1/ 222.9
Jenpeg: 168.0/ 168.0
Grand_Rapids: 479.9/ 479.9
Pine_Falls: 103.6/ 103.6
Great_Falls: 136.3/ 136.8
McArthur: 56.0/ 56.5
PointeDuBois: 78.8/ 78.8
Slave_Falls: 68.0/ 68.0
7_Sisters: 165.4/ 165.4
Selkirk: 0.0/ 132.0
Brandon: 0.0/ 386.5
St_Louis: 115.0/ 115.0
St_Joseph: 138.0/ 138.0
St_Laurent: 0.0/ 0.0

Bipole1: 968.0
Bipole2: 1044.0
Bipole3: 1042.0
MHX: 2173.5

NORTHERN COLLECTOR (700):
Avail Gens: 4307.6
Total Gens: 3175.0
Total Load: 0.2
Total Loss: 20.2
Total Expt: 3154.6
Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
Total Gens: 28695.7
Total Load: 29131.5
Total Loss: 785.1
Total Expt: -1290.2

WESTERN ONTARIO (1101):
Avail Gens: 1660.4
Total Gens: 805.6
Total Load: 592.0
Total Loss: 55.4
Total Expt: 166.4

MH to ONT Total: 218.8
East West Ties: -212.7

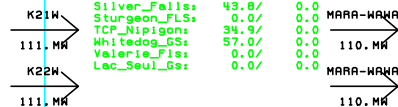
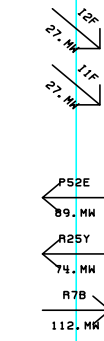
Umbatawa: 0.0/ 0.0
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DOMTAR_DRYDN: 0.0/ 0.0
Bowat_Kraft: 0.0/ 0.0
Ter_Bay_Pulp: 0.0/ 0.0
Lakeland: 0.0/ 0.0
Mullio_DS8: 12.2/ 0.0
Aven_Tbay: 0.0/ 0.0
MusselWhite: 0.0/ 0.0
Atikokan: 48.2/ 0.0
Thunder_Bay: 186.9/ 0.0
Aguasabon: 42.7/ 0.0
Alexander: 50.2/ 0.0
Hawaty: 5.2/ 0.0
Calm_Lake_GS: 0.0/ 0.0
Cameron_Fis: 44.7/ 0.0
Caribou_Fis: 40.1/ 0.0
Ear_Falls_GS: 16.7/ 0.0
Westcoast: 67.5/ 0.0
Man_FLS: 39.2/ 0.0
Norman_GS: 5.2/ 0.0
Pine_Fort: 102.9/ 0.0
Silver_Falls: 43.8/ 0.0
Sturgeon_FLS: 0.0/ 0.0
TCP_Nipigon: 39.9/ 0.0
Whitelog_GS: 57.0/ 0.0
Valerie_Fis: 0.0/ 0.0
Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
Total Gens: 609.1
Total Load: 14.5
Total Loss: 1.5
Total Expt: 552.7
Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 271.5
Total Gens: 753.0
Total Load: 1877.1
Total Loss: 161.5
Total Expt: 1785.5
Indus Load: 398.9



Antelope: 960.0/ 960.0
Coal_Creek: 1290.0/ 1290.0
Coolette: 453.0/ 453.0
Garrison: 192.0/ 480.0
Heskett: 111.7/ 111.7
Leland_Olds: 705.0/ 705.0
Stanton: 193.0/ 193.0
Yng_Cntr_SqB: 713.6/ 751.0
Hoot_Lake: 65.0/ 149.1
Williston: 10.0/ 10.0
Jameson: 52.5/ 52.5
Hutland: 25.0/ 25.2
Solway: 95.8/ 96.2
Lewis: 56.0/ 56.0
BigStone: 494.0/ 494.0
Miles_City: 0.0/ 26.0
Fort_Peck: 108.0/ 108.0
Rugby_Mind: 70.0/ 150.0
G904: 60.0/ 151.8
Langdon_Mind: 90.0/ 178.5
G873_G875: 0.0/ 0.0
G880: 0.0/ 0.0
J157: 0.0/ 0.0
Veiva_Mind: 12.0/ 12.0
MapleRiverND: 2.0/ 2.0
Dillon_Mind: 50.6/ 100.1
Bison_Mind: 75.0/ 75.0
Spirit_Wind: 102.6/ 102.6
DiamondHillND: 30.0/ 30.0
CedarHillMND: 19.5/ 19.5
Tatanka_MND: 0.0/ 180.0
Culbertson: 7.5/ 127.5
Ponoma: 40.0/ 40.0
Ecklund: 99.0/ 99.0
NordPrairieND: 115.5/ 115.5
Fibrominn: 50.0/ 50.0
Edgely: 13.7/ 13.7
ElbowLake: 21.0/ 21.0
Ashtabula: 139.8/ 229.2
Louverne: 91.0/ 91.0
Prairie: 4.0/ 4.0
AlexPLDM: 0.0/ 7.8
DLRUDS: 0.0/ 9.0
HPS: 1.5/ 11.5
Genson: 12.0/ 12.0
RVS: -39.2/ 44.0
DGX4: -30.0/ 40.0
NBCS: 22.5/ 22.5
Baldwin: 30.0/ 30.0
Glen_DC: 48.0/ 90.0
GU_NBCSG: 7.0/ 7.0
Orayton: 0.0/ 125.0

ND Coal Fields (711):

Avail Gens: 7126.6
Total Gens: 5538.7
Total Load: 1478.0
Total Loss: 170.3
Total Expt: 3690.0
Indus Load: 380.7

ND Red Avr Vly (710):

Avail Gens: 403.7
Total Gens: 185.8
Total Load: 607.1
Total Loss: 35.2
Total Expt: -454.5
Indus Load: 143.5

North Dakota (700)

Avail Gens: 8841.6
Total Gens: 6823.0
Total Load: 3015.0
Total Loss: 285.3
Total Expt: 3521.2
Indus Load: 562.4

NDEX_AC: 1928.0

CUDC: 1063.2
SQButteDC: 475.0
MilesCityDC: 55.0
East Bias: 105.0

Fargo_SVC MVAR:

0 of 1 machines
OMIN: 0.0
QMAX: 0.0
QGEN: 0.0
MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:

1 of 1 machines
OMIN: -86.4
QMAX: 125.0
QGEN: 27.5
MARG: 97.5 (Out:0.0)

ND Southeastern (712):

Avail Gens: 1311.3
Total Gens: 1098.5
Total Load: 929.9
Total Loss: 81.9
Total Expt: 85.8
Indus Load: 38.2

Shunts:

PrairieFSH MVAR: 0.0
ShaynesW MVAR: 0.0
Ramsay230 MVAR: 60.0

Montecello: 568.0/ 568.0
PrairieisInd: 1044.0/ 1044.0
King: 555.0/ 555.0
Sherco: 2291.0/ 2291.0
French_IsInd: 28.0/ 28.0
Red_Hing: 22.4/ 22.4
Hilmarth: 22.0/ 22.0
Holcombe: 35.2/ 35.2
Cornell: 30.5/ 30.5
JinFalls: 56.3/ 56.3
Riverside: 150.3/ 150.3
Black_Dog: 548.6/ 548.6
BFTG: 22.3/ 22.3
LSP_CT: 177.3/ 177.3
LSSTeam: 106.2/ 106.2
MNRiver: 0.0/ 49.9
Blue_Lake: 172.3/ 489.2
InverHills: 250.0/ 300.0
White: 0.0/ 322.0
WhiteG: 0.8/ 0.9
Fenton: 0.0/ 136.0
STP_Go: 25.0/ 25.0
BFT: 50.5/ 50.5
MEC: 0.0/ 372.0
HESTPIP: 3.0/ 8.3
GHI: 13.4/ 36.7
FEP: 145.0/ 150.0
Janesville: 0.0/ 5.0
FLYCD: 4.6/ 4.6
BILSBY: 2.4/ 2.4
KEYCT: 32.4/ 32.4
Hridge: 2.7/ 7.3
ERIDGE: 3.7/ 10.0
Colvill: 0.0/ 357.0
HBR: 0.0/ 610.0
G255: 200.0/ 200.0
G256: 100.0/ 100.0
RIVERSIDE: 0.0/ 406.2
RiverFalls: 0.0/ 20.0
Sridge: 2.0/ 5.4
G176: 130.7/ 160.0
BR13: 80.6/ 287.5
CH83: 172.9/ 281.1
GRNDMDH: 0.0/ 100.5
G609: 0.0/ 5.0
NOB: 100.0/ 200.0
UTLK: 1.6/ 5.0
FEP-ST: 97.0/ 100.0
Grant_City: 30.7/ 60.5
HEAC: 33.7/ 33.7
StCloud: 6.7/ 6.7
Hain_ST: 12.0/ 26.0
Rich_VA: 12.0/ 12.0
Hurley: 0.0/ 0.0
Blearth: 0.0/ 8.2
BigFell: 7.7/ 7.7
CRNFCLY: 0.0/ 7.4
LKCRYST: 0.0/ 5.8
Madellville: 0.0/ 9.7
Newell: 0.0/ 30.6
SLPY_MU: 0.0/ 8.6
FARFXNU: 0.0/ 2.7
MELASHU: 0.0/ 8.0
KENYNU: 0.0/ 5.4

MWEX: 1569.7
MWSI: 1253.1
TCEX: 1399.1

Minnesota Pwr (720):
Avail Gens: 2814.2
Total Gens: 1491.1
Total Load: 1809.9
Total Loss: 97.6
Total Expt: -416.9
Indus Load: 1117.4

Minn Wisconsin (725)

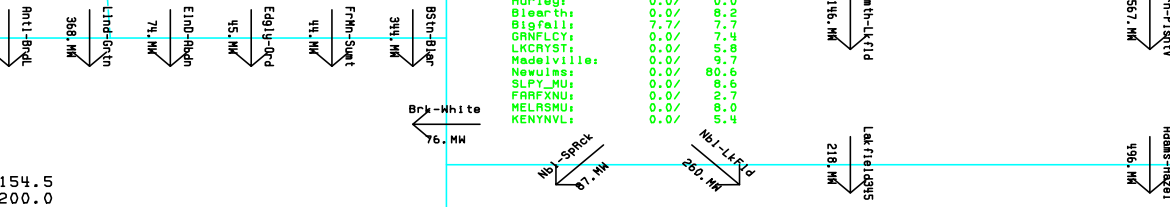
Avail Gens: 16189.3
Total Gens: 9230.8
Total Load: 10004.1
Total Loss: 543.1
Total Expt: -1323.9

Twin Cities (725):
Avail Gens: 19375.1
Total Gens: 7739.7
Total Load: 8194.2
Total Loss: 445.5
Total Expt: -305.9
Indus Load: 277.7

ForbesCap MVAR:
1 of 1 machines
OMIN: -450.0
QMAX: 400.0
QGEN: 256.3
MARG: 143.7 (Out:0.0)

SHUNTS:
ForbesCap MVAR: 600.0
Running230 MVAR: 0.0
ParksLake MVAR: 0.0

RapidCityDC: -50.0
Stegal DC: 0.0
Sidney DC: 21.5
SWING (MW): 974.3/ 1154.5
SWING (MVAR): 497.2/ 200.0



Saskatchewan (672)

Avail Gens: 4996.9
 Total Gens: 4079.8
 Total Load: 4144.3
 Total Loss: 98.3
 Total Expt: -163.3
 Indus Load: 1356.2

MH to SPC Total: -1.7
 IslandFallsLOOP: -42.8
 MH to SPC (230): 41.1

Boundary_Dam: 709.0/ 875.0
 Poplar_River: 630.6/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 248.1/ 290.0
 Queen_Elizb2: 320.0/ 504.6
 Corus: 249.9/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 228.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 47.0/ 94.0
 Lands: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 94.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 451.4
 Total Load: 350.9
 Total Loss: 9.4
 Total Expt: 191.4
 Indus Load: 11.1

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 876.6
 Total Loss: 39.5
 Total Expt: -262.2
 Indus Load: 161.6

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 71.3
 MARG: 93.9 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 165.0
 QGEN: 9.9
 MARG: 156.1 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 435.9
 MARG: 1264.1 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 146.4
 MARG: 853.6 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 197.6
 Dorsey230 MVAR: 155.0
 Riel230 MVAR: 200.0
 Henday230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph334 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6874.0
 Total Gens: 4184.8
 Total Load: 4779.0
 Total Loss: 230.8
 Total Expt: -825.0
 Indus Load: 770.2

NDC_to_NAC: 0.0
 NDC_to_WPG: 2226.1
 NAC_to_WES: 91.1
 WES_to_WPG: -169.4
 WAV_to_WPG: 525.6

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 719.6/ 1388.7
 Long_Spruce: 549.9/ 1030.6
 Kettle: 969.5/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskawam: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 103.6
 Great_Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 690.0
 Bipole2: 744.0
 Bipole3: 742.0
 MHEX: -696.9

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 2239.0
 Total Load: 0.3
 Total Loss: 12.7
 Total Expt: 2226.1
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 25158.5
 Total Load: 25726.5
 Total Loss: 620.3
 Total Expt: -1259.1

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 886.3
 Total Load: 642.0
 Total Loss: 39.2
 Total Expt: 201.3

MH to ONT Total: -126.4
 East West Ties: -154.5

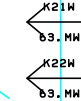
Umbata Falls: 0.0/ 0.0
 Ft_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 27.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 50.0/ 0.0
 Thunder_Bay: 216.5/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 48.3/ 0.0
 Hawaty: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 45.7/ 0.0
 Caribou_Fis: 78.5/ 0.0
 Ear_Falls_GS: 16.3/ 0.0
 Westcoast: 26.2/ 0.0
 Man_Fis: 64.9/ 0.0
 Norman_GS: 6.5/ 0.0
 Pine_Fort: 104.0/ 0.0
 Silver_Falls: 40.1/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 Carleton Place: 39.0/ 0.0
 WhiteDog_GS: 63.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 8.8/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 181.3
 Total Loss: 13.0
 Total Expt: 399.1
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 271.5
 Total Gens: 253.0
 Total Load: 3369.9
 Total Loss: 162.2
 Total Expt: -3279.1
 Indus Load: 409.2



Antelope: 960.0/ 960.0
 Coal_Creek: 1290.0/ 1290.0
 Coote: 433.0/ 433.0
 Garrison: 435.0/ 435.0
 Heskett: 111.7/ 111.7
 Leland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 751.0/ 751.0
 Hood_Lake: 149.1/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 52.5/ 52.5
 Hetland: 25.2/ 25.2
 Solway: 87.4/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 26.0/ 26.0
 Fort_Peck: 102.0/ 102.0
 Rugby_Mind: 150.0/ 150.0
 G904: 151.8/ 151.8
 Langdon_Mind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 12.0/ 12.0
 MapleRiverND: 2.0/ 2.0
 Diver_Mind: 50.6/ 100.1
 Bison_Mind: 75.0/ 75.0
 Spirit_Wind: 102.6/ 102.6
 DiamondHillND: 30.0/ 30.0
 CedarHillMND: 19.5/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 7.5/ 127.5
 Ponoma: 40.0/ 40.5
 Ecklund: 99.0/ 99.0
 NordPrairieND: 115.5/ 115.5
 FibroMinn: 50.0/ 50.0
 Edgely: 13.6/ 13.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 179.5/ 229.2
 Luverne: 90.8/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 7.8/ 7.8
 DLUDS1: 10.0/ 10.0
 WPS: 11.5/ 11.5
 Genson: 9.0/ 11.2
 RVS: -39.2/ 44.0
 DGX4: -30.0/ 40.0
 NBGS: 22.5/ 22.5
 Baldwin: 99.0/ 99.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 125.0

ND Coal Fields (711):

Avail Gens: 7175.6
 Total Gens: 6442.8
 Total Load: 2105.9
 Total Loss: 243.0
 Total Expt: 4093.5
 Indus Load: 0.0

ND Red Avr Vly (710):

Avail Gens: 403.7
 Total Gens: 269.9
 Total Load: 1131.0
 Total Loss: 55.8
 Total Expt: -916.9
 Indus Load: 0.0

North Dakota (700)

Avail Gens: 8890.5
 Total Gens: 7950.7
 Total Load: 4803.2
 Total Loss: 397.2
 Total Expt: 2748.9
 Indus Load: 0.0

NDEX_AC: 1125.7
 CUUC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 85.0
 East Bias: 177.3

Fargo_SVC MVAR:

0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:

1 of 1 machines
 OMIN: -86.2
 QMAX: 124.7
 QGEN: -86.2
 MARG: 0.0 (Out:0.0)

ND Southeastrn (712):

Avail Gens: 1311.3
 Total Gens: 1238.0
 Total Load: 1566.3
 Total Loss: 98.4
 Total Expt: -427.6
 Indus Load: 0.0

Shunts:

PrairieFSH MVAR: 160.0
 ShayneSW MVAR: 80.0
 Ramsey230 MVAR: 60.0

Montecello: 568.0/ 568.0

PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2264.1/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hiram: 22.0/ 22.0
 Holcombe: 0.0/ 35.2
 Cornell: 0.0/ 30.5
 JimFalls: 0.0/ 56.3
 Riverside: 0.0/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 316.9/ 489.2
 WhiteHills: 50.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.0/ 0.9
 Fenton: 0.0/ 136.0
 STP_Co: 0.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 2.9/ 8.3
 CHM: 12.9/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 0.0/ 4.6
 BILSBY: 0.0/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 2.6/ 7.3
 CRIDGE: 3.5/ 10.0
 Colvill: 290.0/ 357.0
 HBR: 0.0/ 610.0
 G255: 200.0/ 200.0
 G256: 50.0/ 100.0
 RIVERSIDE: 0.0/ 406.2
 RiverFalls: 5.0/ 20.0
 SRidge: 1.9/ 5.4
 G176: 117.0/ 101.0
 BR13: 77.3/ 287.5
 CHB3: 227.2/ 281.1
 GRNDMDH: 0.0/ 100.5
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP-ST: 100.0/ 100.0
 Grant_City: 60.0/ 60.0
 HERC: 33.7/ 33.7
 STCloud: 0.0/ 6.7
 Rich_ST: 0.0/ 26.0
 Rich_VA: 0.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Rich_Fall: 0.0/ 7.7
 CRNFLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newell: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

Lept-Akly

NOT FOUND
 12.MW

Raub-Hubd
 83.MW

Inmn-WngR
 96.MW

Alax-Dgls
 73.MW

GLCH-WILM
 15.MW

Kerk-kart
 7.MW

Mops-GrnF
 48.MW

Canb-GrnF
 19.MW

Minnesota Pwr (720):

Avail Gens: 2814.2
 Total Gens: 1616.5
 Total Load: 225.0
 Total Loss: 84.6
 Total Expt: -694.2
 Indus Load: 1117.4

Minn Wiscon (725):

Avail Gens: 16191.5
 Total Gens: 9902.5
 Total Load: 11463.4
 Total Loss: 332.6
 Total Expt: -1901.1

Twin Cities (725):

Avail Gens: 13977.3
 Total Gens: 8286.0
 Total Load: 9237.8
 Total Loss: 247.9
 Total Expt: -1206.8
 Indus Load: 280.3

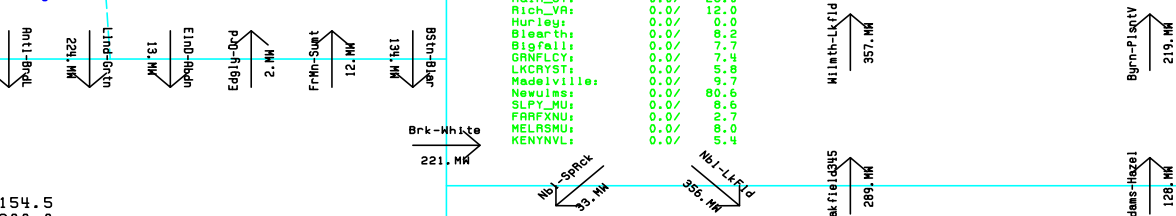
ForbesCap MVAR:

1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: -150.4
 MARG: -299.6 (Out:0.0)

Shunts:

ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

RapidCityDC: -112.8
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 974.4/ 1154.5
 SWING (MVAR): 497.2/ 200.0



Saskatchewan (672)

Avail Gens: 4996.9
 Total Gens: 4079.8
 Total Load: 4144.3
 Total Loss: 98.1
 Total Expt: -162.5
 Indus Load: 1356.2

MH to SPC Total: -2.1
 IslandFallsLOOP: -42.8
 MH to SPC (230): 40.6

Boundary_Dam: 709.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 10.0/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 248.1/ 290.0
 Queen_Elizb2: 320.0/ 504.6
 Corus: 249.3/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 228.0/ 235.0
 Coteau_Creek: 150.0/ 183.0
 ERMIN: 47.0/ 94.0
 Lands: 0.0/ 76.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 94.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 451.4
 Total Load: 355.3
 Total Loss: 9.6
 Total Expt: 86.5
 Indus Load: 201.9

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 87.8
 Total Loss: 32.8
 Total Expt: -272.7
 Indus Load: 163.7

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 78.2
 MARG: 87.0 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 166.0
 QGEN: 10.6
 MARG: 155.4 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: 0.0
 MARG: 95.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: 0.0
 MARG: 150.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 136.6
 MARG: 1563.4 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 149.9
 MARG: 850.1 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 197.6
 Dorsey230 MVAR: 355.0
 Riel230 MVAR: 300.0
 Henday230 MVAR: 300.0
 Radison138 MVAR: 229.3
 StJoseph334 MVAR: 20.0
 StLeon34 MVAR: 0.0

Mani toba (667)

Avail Gens: 6874.0
 Total Gens: 4178.3
 Total Load: 4779.0
 Total Loss: 226.2
 Total Expt: -826.9
 Indus Load: 769.0

NDC_to_NAC: 0.0
 NDC_to_WPG: 2219.8
 NAC_to_WES: 86.5
 WES_to_WPG: -184.1
 WAV_to_WPG: 522.2

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 717.7/ 1318.7
 Long_Spruce: 548.4/ 1030.6
 Kettle: 966.4/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskatim: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 103.6
 Great_Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Leons: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 688.0
 Bipole2: 742.0
 Bipole3: 740.0
 MHX: -699.5

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 2232.5
 Total Load: 0.3
 Total Loss: 12.4
 Total Expt: 2219.8
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 25158.5
 Total Load: 25726.5
 Total Loss: 620.5
 Total Expt: -1259.2

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 886.3
 Total Load: 642.0
 Total Loss: 39.2
 Total Expt: 201.2

MH to ONT Total: -125.3
 East West Ties: -155.8

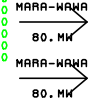
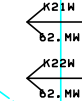
Umbata Falls: 0.0/ 0.0
 Ft_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeside: 0.0/ 0.0
 Murillo_DSB: 27.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokani: 50.0/ 0.0
 Thunder_Bay: 216.5/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 48.3/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 45.7/ 0.0
 Caribou_Fis: 76.5/ 0.0
 Ear_Falls_GS: 16.3/ 0.0
 Westcoast: 26.2/ 0.0
 Man_Fis: 64.9/ 0.0
 Norman_GS: 6.5/ 0.0
 Pine_Fort: 104.0/ 0.0
 Silver_Falls: 40.1/ 0.0
 Sturgeon_Fis: 0.0/ 0.0
 TGP_Nipigon: 34.9/ 0.0
 WhiteDog_GS: 63.0/ 0.0
 Valeris_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 8.8/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 183.6
 Total Loss: 12.9
 Total Expt: 396.9
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 3352.0
 Total Loss: 158.5
 Total Expt: -3257.4
 Indus Load: 403.4



ND Coal Fields (711):

Antelope: 930.7/ 960.0
 Coal_Creek: 1223.0/ 1240.0
 Coote: 449.5/ 453.0
 Garrison: 435.0/ 435.0
 Heskett: 102.1/ 111.7
 Leland_Olds: 700.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Cntr_SqB: 741.0/ 751.0
 Hood_Lake: 113.5/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 41.9/ 52.5
 Hetland: 20.1/ 25.2
 Solway: 87.4/ 96.2
 Lewis: 53.0/ 56.0
 BigStone: 390.0/ 494.0
 Miles_City: 20.4/ 26.0
 Fort_Peck: 102.0/ 102.0
 Rugby_Mind: 150.0/ 150.0
 G904: 150.0/ 151.8
 Langdon_Mind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 4.2/ 12.0
 MapleRiverND: 0.6/ 2.0
 Diver_Mind: 20.0/ 100.1
 Bison_Mind: 35.0/ 75.0
 Spirit_Wind: 79.0/ 102.6
 DiamondHillND: 30.0/ 30.0
 CedarHillMND: 19.5/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 5.5/ 127.5
 Pomes: 111.1/ 40.5
 Ecklund: 34.7/ 99.0
 NordPrairieND: 42.0/ 115.5
 Fibrominn: 39.9/ 50.0
 Edgely: 3.2/ 13.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 94.6/ 229.2
 Luverne: 48.7/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 6.2/ 7.8
 DLURDST: 8.0/ 10.0
 HPS: 6.1/ 11.5
 Genson: 7.2/ 11.2
 RVS: -39.2/ 44.0
 DGX4: -30.0/ 40.0
 NBGS: 16.5/ 22.5
 Baldwin: 34.7/ 99.0
 Glen_DC: 85.0/ 90.0
 GU_NBCSG: 5.0/ 7.0
 Drayton: 0.0/ 125.0

Avail Gens: 7175.6
 Total Gens: 5742.5
 Total Load: 2105.9
 Total Loss: 205.2
 Total Expt: 3431.0
 Indus Load: 0.0

ND Red Avr Vly (710):

Avail Gens: 403.7
 Total Gens: 269.9
 Total Load: 1131.0
 Total Loss: 42.8
 Total Expt: -904.0
 Indus Load: 0.0

North Dakota (700)

Avail Gens: 8890.5
 Total Gens: 6882.4
 Total Load: 4803.2
 Total Loss: 320.9
 Total Expt: 1756.8
 Indus Load: 0.0

NDEX_AC: 133.6

CUDC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 85.0
 East Bias: 61.1

Fargo_SVC MVAR:

0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:

1 of 1 machines
 OMIN: -86.2
 QMAX: 124.7
 QGEN: -86.2
 MARG: 0.0 (Out:0.0)

ND Southeastrn (712):

Avail Gens: 1311.3
 Total Gens: 870.0
 Total Load: 1566.3
 Total Loss: 72.9
 Total Expt: -770.2
 Indus Load: 0.0

SHUNTS:

PrairieFSH MVAR: 120.0
 ShayenneSW MVAR: 80.0
 Ramsey230 MVAR: 30.0

Montecello: 568.0/ 568.0

PrairieisInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2264.1/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Wing: 22.4/ 22.4
 Hiram: 22.0/ 22.0
 Holcombe: 0.0/ 35.2
 Cornell: 0.0/ 30.5
 Jivefalls: 50.0/ 50.0
 Riverside: 0.0/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 316.9/ 489.2
 InverHills: 0.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.0/ 0.9
 Fenton: 0.0/ 136.0
 STP_Co: 0.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 HESTPIP: 2.9/ 8.3
 CHM: 12.9/ 36.7
 FEP: 150.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 0.0/ 4.6
 BLSBY: 0.0/ 2.4
 KEYCT: 33.0/ 32.4
 Hridge: 2.6/ 7.3
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP_ST: 100.0/ 100.0
 Grant_City: 6.0/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 0.0/ 6.7
 Rich_ST: 0.0/ 26.0
 Rich_VA: 0.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 BigFalls: 0.0/ 7.7
 GRANFLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madeville: 0.0/ 9.7
 Newville: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MEX: 269.0
 MWSI: 284.7
 TCEX: -814.7

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1616.5
 Total Load: 225.5
 Total Loss: 87.9
 Total Expt: -697.5
 Indus Load: 1117.4

Minn Wiscon (725)

Avail Gens: 16191.5
 Total Gens: 9902.5
 Total Load: 11463.4
 Total Loss: 333.7
 Total Expt: -1902.1

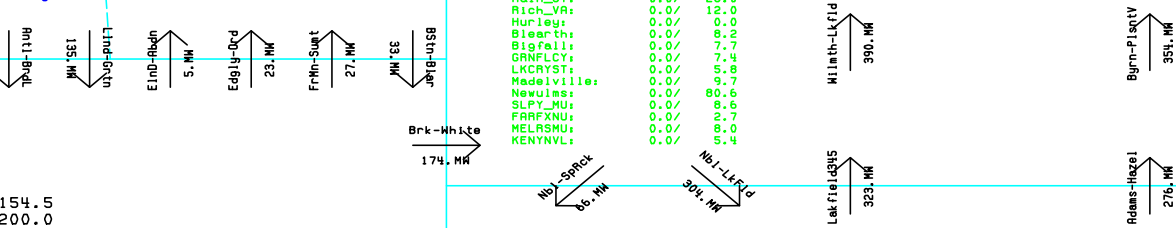
Twin Cities (725):
 Avail Gens: 13977.3
 Total Gens: 8286.0
 Total Load: 9237.8
 Total Loss: 245.6
 Total Expt: -1204.5
 Indus Load: 280.3

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 154.6
 MARG: -295.4 (Out:0.0)

SHUNTS:

ForbesCap MVAR: 300.0
 Running230 MVAR: 0.0
 ParksLake MVAR: 0.0

RapidCityDC: -112.8
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 972.3/ 1154.5
 SWING (MVAR): 497.0/ 200.0



Saskatchewan (672)

Avail Gens: 4684.8
 Total Gens: 2896.2
 Total Load: 2655.6
 Total Loss: 74.2
 Total Expt: 166.4
 Indus Load: 1361.4

MH to SPC Total: -1.4
 IslandFallsLOOP: -54.5
 MH to SPC (230P): 53.0

Boundary_Dam: 875.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 10.6/ 26.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 192.8/ 290.0
 Queen_Elizb2: 162.0/ 504.6
 Cors: 80.0/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 89.0/ 101.0
 Meridian: 159.0/ 235.0
 Coteau_Creek: 100.0/ 183.0
 ERMIN: 0.0/ 94.0
 Landis: 0.0/ 76.5
 Meadow_Lake: 80.0/ 43.0
 CentennialHd: 59.8/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 29.4/ 40.0
 Success: 0.0/ 30.0
 BRADA: 0.0/ 141.0
 CYPUSU: 8.7/ 21.8

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 45.4
 Total Load: 229.5
 Total Loss: 7.4
 Total Expt: 214.6
 Indus Load: 189.7

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 39.4
 Total Expt: 257.1
 Indus Load: 141.1

Grand_Rapids MVAR:
 4 of 4 machines
 OMIN: -160.0
 QMAX: 165.2
 QGEN: 44.6
 MARG: 120.6 (Out:0.0)

7_Sisters MVAR:
 6 of 6 machines
 OMIN: -136.0
 QMAX: 166.0
 QGEN: 76.5
 MARG: 89.5 (Out:0.0)

BirchtreeSVC MVAR:
 1 of 1 machines
 OMIN: -50.0
 QMAX: 95.0
 QGEN: -0.0
 MARG: -50.0 (Out:0.0)

Ponton_SVC MVAR:
 1 of 1 machines
 OMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey_Sync MVAR:
 8 of 9 machines
 OMIN: -895.0
 QMAX: 1700.0
 QGEN: 239.3
 MARG: 1460.7 (Out:160.0)

Riel_Sync MVAR:
 4 of 4 machines
 OMIN: -548.0
 QMAX: 1000.0
 QGEN: 437.2
 MARG: 562.8 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 98.8
 Dorsey230 MVAR: 355.0
 Riel230 MVAR: 200.0
 Henday230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph334 MVAR: 20.0
 StLeon34 MVAR: 0.0

Manitoba (667)

Avail Gens: 6874.0
 Total Gens: 5154.3
 Total Load: 2505.0
 Total Loss: 259.1
 Total Expt: 2390.2
 Indus Load: 722.1

NDC_to_NAC: 0.0
 NDC_to_WPG: 3186.7
 NAC_to_WES: 214.6
 WES_to_WPG: 473.1
 WAV_to_WPG: 319.1

Keeyask: 0.0/ 695.1
 Conawapa: 0.0/ 0.0
 Limestone: 1135.8/ 1348.7
 Long_Spruce: 868.1/ 1030.6
 Kettle: 1204.5/ 1233.2
 Kelsey: 251.3/ 315.0
 Muskeg: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 89.6/ 103.6
 Great_Falls: 135.2/ 136.8
 McArthur: 56.5/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Louis: 115.0/ 115.0
 St_Joseph: 138.0/ 138.0
 St_Laurent: 0.0/ 0.0

Bipole1: 978.0
 Bipole2: 1054.0
 Bipole3: 1052.0
 MHEX: 2171.3

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 3208.5
 Total Load: 0.2
 Total Loss: 21.6
 Total Expt: 3186.7
 Indus Load: 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 28695.7
 Total Load: 29131.5
 Total Loss: 785.3
 Total Expt: -1290.4

WESTERN ONTARIO (1101):

Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 55.6
 Total Expt: 166.3

MH to ONT Total: 220.3
 East West Ties: -214.4

Umbatawa: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakeland: 0.0/ 0.0
 Murillo_DS8: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Hawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fis: 44.7/ 0.0
 Caribou_Fis: 40.1/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fls: 39.2/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Fort: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fls: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 Whitelog_GS: 57.0/ 0.0
 Valerie_Fis: 0.0/ 0.0
 Lac_Seuil_GS: 0.0/ 0.0

WINNIPEG RIVER (704):

Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 40.2
 Total Loss: 13.9
 Total Expt: 594.4
 Indus Load: 0.0

SOUTHERN MH & HPG (703):

Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 1883.8
 Total Loss: 176.8
 Total Expt: 1807.6
 Indus Load: 391.3

North Dakota (700)

Avail Gens: 8841.6
 Total Gens: 4940.2
 Total Load: 3015.0
 Total Loss: 163.8
 Total Expt: 1759.9
 Indus Load: 562.4

ND Coal Fields (711):
 Avail Gens: 7126.4
 Total Gens: 4244.4
 Total Load: 1478.0
 Total Loss: 115.6
 Total Expt: 2650.3
 Indus Load: 380.7

ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 95.8
 Total Load: 607.1
 Total Loss: 23.9
 Total Expt: -535.2
 Indus Load: 143.5

ND Southeastern (712):
 Avail Gens: 1311.3
 Total Gens: 600.0
 Total Load: 929.9
 Total Loss: 24.3
 Total Expt: -355.2
 Indus Load: 38.2

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.4
 QMAX: 125.0
 QGEN: -86.4
 MARG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 0.0
 ShayenneSW MVAR: 0.0
 Ramsey230 MVAR: 50.0

Montecello: 568.0/ 568.0
 PrairieIsInd: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2291.0/ 2291.0
 French_IsInd: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Hilsman: 25.0/ 25.0
 Holcom: 35.2/ 35.2
 Cornell: 30.5/ 30.5
 JimFalls: 56.3/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.6/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSSTeam: 106.2/ 106.2
 MNRiver: 0.0/ 49.9
 Blue_Lake: 172.3/ 489.2
 InverHills: 250.0/ 300.0
 White: 0.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 0.0/ 136.0
 STP_Go: 25.0/ 25.0
 BFT: 50.5/ 50.5
 MEC: 0.0/ 372.0
 HESTPIP: 3.0/ 8.3
 CHM: 13.4/ 36.7
 FEP: 145.0/ 150.0
 Janesville: 0.0/ 5.0
 FLYCD: 4.6/ 4.6
 BLSBY: 2.4/ 2.4
 KEYCT: 32.4/ 32.4
 Hridge: 2.7/ 7.3
 CRIDGE: 3.7/ 10.0
 Colvill: 0.0/ 357.0
 HBR: 0.0/ 610.0
 G255: 200.0/ 200.0
 G256: 1.0/ 0.0
 RIVERSIDE: 0.0/ 406.2
 RiverFalls: 0.0/ 20.0
 Sridge: 2.0/ 5.4
 G176: 130.7/ 160.0
 BR13: 80.6/ 287.5
 CHB3: 129.4/ 281.1
 GRNDMDM: 0.0/ 100.5
 G609: 0.0/ 5.0
 NOB: 100.0/ 200.0
 UTLK: 1.6/ 5.0
 FEP-ST: 97.0/ 100.0
 Grant_City: 30.7/ 60.5
 HERC: 33.7/ 33.7
 STCloud: 6.7/ 6.7
 Rich_ST: 12.0/ 26.0
 Rich_VA: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Bearht: 0.0/ 8.2
 Blair: 0.0/ 7.4
 CRNFCLY: 0.0/ 7.4
 LKCRYST: 0.0/ 5.8
 Madenville: 0.0/ 9.7
 Newville: 0.0/ 80.6
 SLPY_MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELRSNU: 0.0/ 8.0
 KENYNU: 0.0/ 5.4

MHEX: 1238.8
 MWSI: 839.0
 TCEX: 911.6

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1491.1
 Total Load: 1809.9
 Total Loss: 92.8
 Total Expt: -412.2
 Indus Load: 1117.4

Minn Wisconsin (725)

Avail Gens: 16189.3
 Total Gens: 9187.3
 Total Load: 10004.1
 Total Loss: 432.2
 Total Expt: -1256.5

Twin Cities (725):
 Avail Gens: 19375.1
 Total Gens: 7896.2
 Total Load: 8194.2
 Total Loss: 399.3
 Total Expt: -844.3
 Indus Load: 277.7

ForbesCap MVAR:
 1 of 1 machines
 OMIN: -450.0
 QMAX: 400.0
 QGEN: 80.0
 MARG: 320.0 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 600.0
 Running230 MVAR: -20.0
 ParksLake MVAR: 0.0

Antelope: 703.2/ 960.0
 Coal_Creek: 908.3/ 1240.0
 Coote: 331.8/ 453.0
 Garrison: 140.6/ 480.0
 Heslett: 81.8/ 111.7
 Leland_Olds: 516.4/ 705.0
 Stanton: 141.4/ 193.0
 Yng_Cntr_SqB: 522.7/ 751.0
 Hood_Lake: 41.4/ 149.1
 Williston: 7.3/ 10.0
 Jamestown: 33.5/ 52.5
 Hetland: 15.9/ 25.2
 Solway: 95.8/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 214.8/ 494.0
 Miles_City: 0.0/ 26.0
 Fort_Peck: 79.1/ 108.0
 Rugby_Mind: 150.0/ 150.0
 G904: 150.9/ 151.8
 Linds_Gonnd: 0.0/ 178.5
 G873_G875: 0.0/ 0.0
 G880: 0.0/ 0.0
 J157: 0.0/ 0.0
 Veiva_Mind: 8.8/ 12.0
 MapleRiverND: 1.3/ 2.0
 Diver_Mind: 37.1/ 100.1
 Bison_Mind: 54.9/ 75.0
 Spirit_Wind: 65.4/ 102.6
 DiamondHillND: 22.0/ 30.0
 CedarHillMND: 14.3/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 5.5/ 127.5
 Pomes: 25.0/ 40.5
 Ecklund: 72.5/ 99.0
 NordPrairwND: 84.6/ 115.5
 FibroMinn: 31.9/ 50.0
 Edgely: 8.7/ 13.7
 ElbowLake: 13.4/ 21.0
 Ashtabula: 89.1/ 229.2
 Luverne: 58.0/ 91.0
 Prairie: 0.0/ 4.0
 AlexPLDM: 0.0/ 7.8
 DLRUSTD: 0.0/ 9.0
 HPS: 1.0/ 11.5
 Genson: 12.2/ 12.2
 RVS: -39.2/ 44.0
 DGX4: -30.0/ 40.0
 NBCS: 12.5/ 22.5
 Baldwin: 72.5/ 99.0
 Glen_DC: 35.2/ 90.0
 GU_NBCSG: 5.1/ 7.0
 Drayton: 0.0/ 125.0

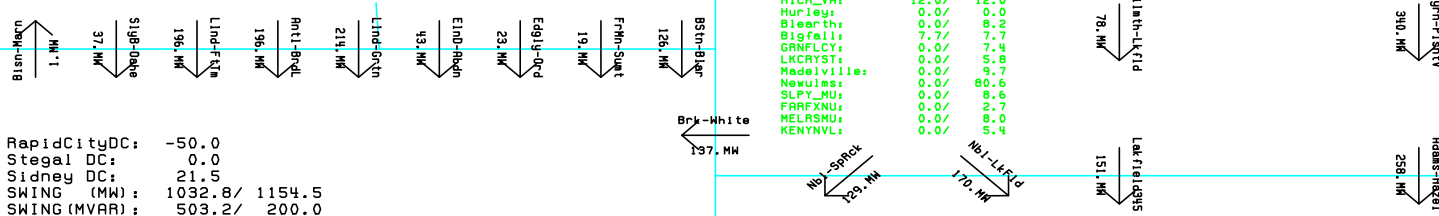
ND Red Avr Vly (710):
 Avail Gens: 403.7
 Total Gens: 95.8
 Total Load: 607.1
 Total Loss: 23.9
 Total Expt: -535.2
 Indus Load: 143.5

Fargo_SVC MVAR:
 0 of 1 machines
 OMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WatertownSVC MVAR:
 1 of 1 machines
 OMIN: -86.4
 QMAX: 125.0
 QGEN: -86.4
 MARG: 0.0 (Out:0.0)

SHUNTS:
 PrairieFSH MVAR: 0.0
 ShayenneSW MVAR: 0.0
 Ramsey230 MVAR: 50.0

RapidCityDC: -50.0
 Stegal DC: 0.0
 Sidney DC: 21.5
 SWING (MW): 1032.8/ 1154.5
 SWING (MVAR): 503.2/ 200.0



Saskatchewan (672)
 Avail Gens: 4684.8
 Total Gens: 3670.9
 Total Load: 3753.6
 Total Loss: 84.9
 Total Expt: -167.6
 Indus Load: 1361.4

NORTHERN AC (701):
 Avail Gens: 538.0
 Total Gens: 451.6
 Total Load: 265.3
 Total Loss: 7.4
 Total Expt: 178.9
 Indus Load: 199.7

Manitoba (667)
 Avail Gens: 6874.1
 Total Gens: 2913.4
 Total Load: 3579.0
 Total Loss: 161.2
 Total Expt: -826.9
 Indus Load: 760.0

Bipole1: 302.0
 Bipole2: 326.0
 Bipole3: 326.0
 MHEX: -702.7

NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 967.4
 Total Load: 0.3
 Total Loss: 3.7
 Total Expt: 963.4
 Indus Load: 0.0

MH to SPC Total: 2.7
 IslandFallsLOOP: -53.7
 MH to SPC (230): 56.4

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 466.2
 Total Loss: 36.2
 Total Expt: 145.5
 Indus Load: 148.5

NDC_to_NAC: 0.0
 NDC_to_WPG: 963.4
 NAC_to_WES: 178.9
 WES_to_WPG: 321.6
 WRV_to_WPG: 640.5

Ontario (103)
 Avail Gens: 40870.0
 Total Gens: 28695.7
 Total Load: 29131.5
 Total Loss: 752.7
 Total Expt: -1258.2

Boundary Dam: 723.4/ 875.0
 Poplar River: 592.5/ 630.0
 REDJC: 11.0/ 25.4
 SHAND: 286.9/ 305.0
 EB_Campbell: 264.2/ 290.0
 Queen Elizabeth: 389.5/ 504.6
 Cory: 231.2/ 278.0
 Nipawin: 239.8/ 255.0
 Island Falls: 88.2/ 101.0
 Meridian: 204.8/ 235.0
 Coteau Creek: 156.2/ 183.0
 ERMIN: 38.5/ 94.0
 Landis: 0.0/ 75.5
 Meadow Lake: 0.0/ 43.0
 CentennialHds: 62.2/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 30.6/ 40.0
 Success: 0.0/ 30.0
 BRADA: 38.5/ 141.0
 CYPUS: 9.1/ 21.8

Grand Rapids MVAR:
 4 of 4 machines
 QMIN: -160.0
 QMAX: 165.2
 QGEN: 82.1
 MARG: 83.1 (Out:0.0)

7 Sisters MVAR:
 6 of 6 machines
 QMIN: -136.0
 QMAX: 165.0
 QGEN: 33.9
 MARG: 132.1 (Out:0.0)

Birchtree SVC MVAR:
 1 of 1 machines
 QMIN: -50.0
 QMAX: 95.0
 QGEN: 0.0
 MARG: 95.0 (Out:0.0)

Pontoon SVC MVAR:
 1 of 1 machines
 QMIN: -20.0
 QMAX: 150.0
 QGEN: -0.0
 MARG: -20.0 (Out:0.0)

Dorsey Sync MVAR:
 8 of 9 machines
 QMIN: -895.0
 QMAX: 1700.0
 QGEN: 49.8
 MARG: 1650.2 (Out:160.0)

Riel Sync MVAR:
 4 of 4 machines
 QMIN: -548.0
 QMAX: 1000.0
 QGEN: 40.4
 MARG: 959.6 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.0
 Dorsey230 MVAR: 44.0
 Riel230 MVAR: 200.0
 Hendey230 MVAR: 100.0
 Radison138 MVAR: 150.0
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Keyask: 0.0/ 695.1
 Limestone: 0.0/ 0.0
 Long Spruce: 312.8/ 1348.7
 Kettle: 239.0/ 1030.6
 Kelsey: 415.5/ 1239.2
 Muskwa: 251.3/ 315.0
 Jenpeg: 200.3/ 223.0
 Grand Rapids: 168.0/ 168.0
 Pine Falls: 479.9/ 479.9
 Great Falls: 89.6/ 103.6
 McArthur: 135.2/ 136.8
 PointeDuBois: 56.5/ 56.5
 Slave Falls: 78.8/ 78.8
 7 Sisters: 68.0/ 68.0
 Selkirk: 165.4/ 165.4
 Brandon: 0.0/ 132.0
 St Leon: 0.0/ 386.5
 St Joseph: 115.0/ 115.0
 St Laurent: 138.0/ 138.0
 St Laurent: 0.0/ 0.0

WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 35.6
 Total Expt: 186.1

MH to ONT Total: -126.9
 East West Ties: -136.8

Umbatte Falls: 0.0/ 0.0
 FT Francis: 0.0/ 0.0
 DONTAR DRYDN: 0.0/ 0.0
 Bowat Kraft: 0.0/ 0.0
 Ter Bay Pulp: 0.0/ 0.0
 Lakehead: 0.0/ 0.0
 Murillo DSB: 12.2/ 0.0
 Aven Tbay: 0.0/ 0.0
 Musselwhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Kawata: 5.2/ 0.0
 Calm Lake GS: 0.0/ 0.0
 Cameron Fls: 44.7/ 0.0
 Caribou Fls: 40.1/ 0.0
 Ear Falls GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man Fls: 39.2/ 0.0
 Norman CGS: 5.2/ 0.0
 Pine Port: 102.9/ 0.0
 Silver Falls: 43.8/ 0.0
 Sturgeon Fls: 0.0/ 0.0
 TCP Nipigon: 34.9/ 0.0
 Whitteog GS: 57.0/ 0.0
 Valerie Fls: 0.0/ 0.0
 Lac Seul GS: 0.0/ 0.0

WINNIPEG RIVER (704):
 Avail Gens: 609.1
 Total Gens: 593.5
 Total Load: 66.3
 Total Loss: 13.5
 Total Expt: 513.6
 Indus Load: 0.0

SOUTHERN MH & WPG (703):
 Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 2780.8
 Total Loss: 100.4
 Total Expt: -2628.2
 Indus Load: 411.8

Antelope: 960.0/ 960.0
 Coal Creek: 1240.0/ 1240.0
 Coyote: 453.0/ 453.0
 Garrison: 480.0/ 480.0
 Heskett: 111.7/ 111.7
 Leiland Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng Cntr SqB: 751.0/ 751.0
 Hoot Lake: 149.1/ 149.1
 Williston: 0.0/ 0.0
 Jamestown: 52.5/ 52.5
 Hetland: 22.2/ 25.0
 Solway: 63.5/ 96.2
 Lewis: 56.0/ 56.0
 Big Stone: 494.0/ 494.0
 Miles City: 25.0/ 26.0
 Fort Pack: 108.0/ 108.0
 Rugby Wind: 150.0/ 150.0
 G904: 151.8/ 151.8
 Langdon Wind: 178.5/ 178.5
 G873_G875: 0.0/ 0.0
 G830: 0.0/ 0.0
 J157: 0.0/ 0.0
 Velve Wind: 11.4/ 12.0
 Maple River WD: 2.0/ 2.0
 Oliver Wind: 50.6/ 100.1
 Bison Wind: 71.7/ 75.0
 Spirit Wind: 102.6/ 102.6
 Diamd Willow: 30.0/ 30.0
 Cedar Hill Wind: 18.6/ 19.5
 Tatanka Wind: 0.0/ 180.0
 Culbertson: 127.5/ 127.5
 Ponom: 40.5/ 40.5
 Ecklund: 94.6/ 99.0
 NordPrairWind: 114.7/ 115.5
 FibroMin: 50.0/ 50.0
 Edgely: 13.7/ 13.7
 Elbow Lake: 0.0/ 21.0
 Ashtabula: 138.9/ 229.2
 Luverne: 91.0/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 7.8/ 7.8
 DLARUDST: 9.0/ 9.0
 MPS: 11.5/ 11.5
 Benson: 12.2/ 12.2
 AVS: -39.2/ 44.0
 DGCX4: -30.0/ 40.0
 NBC3: 22.5/ 22.5
 Bala Wind: 90.0/ 90.0
 Glen DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 0.0

ND Coal Fields (711):
 Avail Gens: 7126.6
 Total Gens: 6460.8
 Total Load: 2020.4
 Total Loss: 212.3
 Total Expt: 4227.6
 Indus Load: 0.0

ND Red Rvr Vly (710):
 Avail Gens: 403.7
 Total Gens: 246.0
 Total Load: 861.1
 Total Loss: 50.4
 Total Expt: -665.5
 Indus Load: 0.0

North Dakota (700)
 Avail Gens: 8841.6
 Total Gens: 7906.8
 Total Load: 4315.5
 Total Loss: 361.3
 Total Expt: 3228.6
 Indus Load: 0.0

ND NDEX AC: 1603.3
 CUDC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 87.0
 East Bias: 176.6

ND Southeastrn (712):
 Avail Gens: 1311.3
 Total Gens: 1200.0
 Total Load: 1434.0
 Total Loss: 98.5
 Total Expt: -333.0
 Indus Load: 0.0

Fargo SVC MVAR:
 0 of 1 machines
 QMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

Water town SVC MVAR:
 1 of 1 machines
 QMIN: -86.0
 QMAX: 124.4
 QGEN: -71.9
 MARG: -14.2 (Out:0.0)

SHUNTS:
 PrairieFSW MVAR: 80.0
 ShynneSW MVAR: 80.0
 Ramsey230 MVAR: 60.0

Montecello: 568.0/ 568.0
 PrairieWind: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French Island: 28.0/ 28.0
 Red Wing: 22.4/ 22.4
 Wilmarth: 22.0/ 22.0
 Holcomber: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 Jim Falls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black Dog: 548.0/ 548.6
 BFTG: 22.3/ 22.3
 LSP CT: 177.3/ 177.3
 LSTeam: 106.2/ 106.2
 FEP: 25.0/ 25.0
 MNRiver: 49.9/ 49.9
 Blue Lake: 316.9/ 489.2
 Inver Hills: 300.0/ 300.0
 White: 106.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP Co: 25.0/ 50.5
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 WESTPIP: 1.6/ 8.3
 GMM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Jonesville: 0.0/ 5.0
 FLYCLD: 4.6/ 4.6
 BYLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 WRIde: 1.5/ 7.3
 HURidge: 0.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 200.0/ 200.0
 G255: 50.0/ 100.0
 RIVERSIDE: 406.2/ 406.2
 River Falls: 12.0/ 20.0
 SRidge: 1.1/ 5.4
 G176: 100.0/ 100.0
 BR13: 95.9/ 287.5
 CHB3: 173.0/ 261.1
 GRANDM: 100.5/ 100.5
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UFLK: 0.9/ 5.0
 FEP ST: 100.0/ 100.0
 Great City: 60.5/ 60.5
 HERC: 33.7/ 33.7
 StCloud: 6.7/ 6.7
 Main ST: 26.0/ 26.0
 Rich VA: 12.0/ 12.0
 HURidge: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Bigfall: 5.0/ 7.7
 GRANFLY: 0.0/ 7.4
 LKCRYS: 0.0/ 5.8
 Madelville: 0.0/ 29.7
 Neulms: 0.0/ 80.6
 SLPY MU: 0.0/ 8.6
 FARFXNU: 0.0/ 2.7
 MELASMU: 8.0/ 8.0
 KENYNVL: 0.0/ 5.4

MWEX: 480.9
 MWSI: 452.1
 TCEx: -871.7

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1542.4
 Total Load: 1940.9
 Total Loss: 76.8
 Total Expt: -475.8
 Indus Load: 1117.4

KNG-EauClr: 295. MM
 EauClr-Rrp: 116. MM

Minn Wisconsin (725)
 Avail Gens: 16189.3
 Total Gens: 12814.7
 Total Load: 14280.3
 Total Loss: 385.5
 Total Expt: -1858.7

Twin Cities (725):
 Avail Gens: 13375.1
 Total Gens: 11272.2
 Total Load: 12339.4
 Total Loss: 308.6
 Total Expt: -1382.8
 Indus Load: 289.7

ForbesCap MVAR:
 1 of 1 machines
 QMIN: -450.0
 QMAX: 400.0
 QGEN: -137.2
 MARG: -312.8 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Parking230 MVAR: -20.0
 RunkLake MVAR: 0.0

RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 992.5/ 1154.5
 SWING (MVAR): 499.0/ 200.0

Brk-White: 295. MM
 No-Sprack: 50. MM
 No-LK-FG: 50. MM

Byrn-Plectt: 3. MM
 Rdnas-Hazel: 3. MM
 Lak-Hazel: 3. MM

Saskatchewan (672)

Avail Gens: 4684.8
 Total Gens: 4008.9
 Total Load: 3753.6
 Total Loss: 89.0
 Total Expt: 166.3
 Indus Load: 1361.4

NORTHERN AC (701):
 Avail Gens: 537.9
 Total Gens: 451.1
 Total Load: 255.0
 Total Loss: 7.4
 Total Expt: 188.7
 Indus Load: 192.0

Manitoba (667)

Avail Gens: 6874.0
 Total Gens: 5583.7
 Total Load: 3544.0
 Total Loss: 283.3
 Total Expt: 1756.3
 Indus Load: 807.3

Bipole1: 1098.0
 Bipole2: 1186.0
 Bipole3: 1182.0
 MHEX: 1536.7

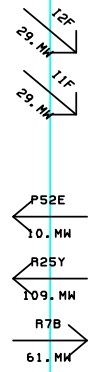
NORTHERN COLLECTOR (700):
 Avail Gens: 4307.6
 Total Gens: 3623.6
 Total Load: 0.3
 Total Loss: 26.5
 Total Expt: 358.8
 Indus Load: 0.0

MH to SPC Total: -1.0
 IslandFallsLOOP: -58.9
 MH to SPC (230): 57.8

NDC_to_NAC: 0.0
 NDC_to_WPG: 3596.8
 NAC_to_WES: 188.7
 WES_to_WPG: 341.0
 WRV_to_WPG: 233.6

WESTERN MAN (702):
 Avail Gens: 647.9
 Total Gens: 647.9
 Total Load: 455.9
 Total Loss: 40.6
 Total Expt: 151.3
 Indus Load: 141.8

Boundary Dam: 875.0/ 875.0
 Poplar_River: 630.0/ 630.0
 REDUC: 11.7/ 25.4
 SHAND: 305.0/ 305.0
 EB_Campbell: 280.9/ 290.0
 Queen_Elizbt: 414.1/ 504.6
 Cory: 245.8/ 278.0
 Nipawin: 255.0/ 255.0
 Island_Falls: 93.7/ 101.0
 Meridian: 217.8/ 235.0
 Coteau_Creek: 166.1/ 183.0
 ERMIN: 41.0/ 94.0
 Landis: 0.0/ 75.5
 Meadow_Lake: 0.0/ 43.0
 CentennialHds: 66.2/ 149.4
 RSHLD: 0.0/ 0.0
 BPLNS: 32.6/ 40.0
 Success: 0.0/ 30.0
 BRADA: 41.0/ 141.0
 CYPUS: 9.6/ 21.8



Keyask: 0.0/ 695.1
 Conewapa: 0.0/ 0.0
 Limestone: 1342.0/ 1348.7
 Long_Spruce: 1026.0/ 1030.6
 Kettle: 1255.6/ 1239.2
 Keisey: 251.0/ 315.0
 Muskatim: 200.1/ 222.9
 Jenpeg: 168.0/ 168.0
 Grand_Rapids: 479.9/ 479.9
 Pine_Falls: 103.6/ 103.6
 Great_Falls: 136.3/ 136.8
 McArthur: 56.0/ 56.5
 PointeDuBois: 78.8/ 78.8
 Slave_Falls: 68.0/ 68.0
 7_Sisters: 165.4/ 165.4
 Selkirk: 0.0/ 132.0
 Brandon: 0.0/ 386.5
 St_Leon: 115.0/ 115.0
 St_Joseph: 138.0/ 138.5
 St_Laurent: 0.0/ 0.0

Ontario (103)

Avail Gens: 40870.0
 Total Gens: 28695.7
 Total Load: 29131.5
 Total Loss: 786.6
 Total Expt: -1291.6

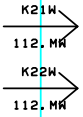
WESTERN ONTARIO (1101):
 Avail Gens: 1660.4
 Total Gens: 805.6
 Total Load: 592.0
 Total Loss: 55.9
 Total Expt: 166.0

MH to ONT Total: 220.6
 East West Ties: -214.6

UmbatteFalls: 0.0/ 0.0
 FT_Francis: 0.0/ 0.0
 DONTAR_DRYDN: 0.0/ 0.0
 Bowat_Kraft: 0.0/ 0.0
 Ter_Bay_Pulp: 0.0/ 0.0
 Lakehead: 0.0/ 0.0
 Murillo_DSB: 12.2/ 0.0
 Aven_Tbay: 0.0/ 0.0
 MusselWhite: 0.0/ 0.0
 Atikokan: 48.2/ 0.0
 Thunder_Bay: 186.9/ 0.0
 Agassabon: 42.7/ 0.0
 Alexander: 50.2/ 0.0
 Kawatay: 5.2/ 0.0
 Calm_Lake_GS: 0.0/ 0.0
 Cameron_Fls: 44.7/ 0.0
 Caribou_Fls: 40.1/ 0.0
 Ear_Falls_GS: 16.7/ 0.0
 Westcoast: 67.5/ 0.0
 Man_Fls: 39.2/ 0.0
 Norman_GS: 5.2/ 0.0
 Pine_Port: 102.9/ 0.0
 Silver_Falls: 43.8/ 0.0
 Sturgeon_Fls: 0.0/ 0.0
 TCP_Nipigon: 34.9/ 0.0
 WhitteDog_GS: 57.0/ 0.0
 Valerie_Fls: 0.0/ 0.0
 Lac_Saul_GS: 0.0/ 0.0

WINNIPEG RIVER (704):
 Avail Gens: 609.1
 Total Gens: 608.1
 Total Load: 411.4
 Total Loss: 12.5
 Total Expt: 454.2
 Indus Load: 77.6

SOUTHERN MH & WPG (703):
 Avail Gens: 771.5
 Total Gens: 253.0
 Total Load: 2691.4
 Total Loss: 196.3
 Total Expt: -2634.7
 Indus Load: 395.9



Riel_Sync MVAR:
 4 of 4 machines
 QMIN: -548.0
 QMAX: 1000.0
 QGEN: 541.8
 MARG: 458.2 (Out:0.0)

SHUNTS:
 Brandon110 MVAR: 148.0
 Dorsey230 MVAR: 755.6
 Riel230 MVAR: 200.0
 Hendey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Dorsey_Sync MVAR:
 8 of 9 machines
 QMIN: -895.0
 QMAX: 1700.0
 QGEN: 153.6
 MARG: 1546.4 (Out:160.0)

Brandon110 MVAR: 148.0
 Dorsey230 MVAR: 755.6
 Riel230 MVAR: 200.0
 Hendey230 MVAR: 600.0
 Radison138 MVAR: 229.3
 StJoseph34 MVAR: 20.0
 StLeon34 MVAR: 0.0

Antelope: 960.0/ 960.0
 Coal_Creek: 1240.0/ 1240.0
 Coyote: 453.0/ 453.0
 Garrison: 480.0/ 480.0
 Heskett: 111.7/ 111.7
 Leiland_Olds: 705.0/ 705.0
 Stanton: 193.0/ 193.0
 Yng_Island_SqB: 751.0/ 751.0
 Hoot_Lake: 149.1/ 149.1
 Williston: 0.0/ 10.0
 Jamestown: 52.5/ 52.5
 Hetland: 22.2/ 25.2
 Solway: 63.5/ 96.2
 Lewis: 56.0/ 56.0
 BigStone: 494.0/ 494.0
 Miles_City: 26.0/ 26.0
 Fort_Pack: 108.0/ 108.0
 Rugby_Mind: 150.0/ 150.0
 G904: 150.9/ 151.8
 Langdon_Mind: 169.5/ 178.5
 G873_G875: 0.0/ 0.0
 G830: 0.0/ 0.0
 J157: 0.0/ 0.0
 Velve_Mind: 10.3/ 12.0
 MapleRiverWD: 2.0/ 2.0
 Oliver_Mind: 50.6/ 100.1
 Bison_Mind: 65.2/ 75.0
 Spirit_Mind: 102.2/ 102.6
 DiamdHillWD: 30.0/ 30.0
 CedarHillWD: 17.0/ 19.5
 Tatanka_MND: 0.0/ 180.0
 Culbertson: 127.5/ 127.5
 Ponom: 40.5/ 40.5
 Ecklund: 86.1/ 99.0
 NordPrairieWD: 104.3/ 115.5
 FibroMinn: 50.0/ 50.0
 Edgeley: 13.7/ 13.7
 ElbowLake: 0.0/ 21.0
 Ashtabula: 138.9/ 229.2
 Luverne: 91.0/ 91.0
 Prairie: 4.0/ 4.0
 AlexPLDM: 7.8/ 7.8
 DLARUDST: 9.0/ 9.0
 MPS: 11.5/ 11.5
 Benson: 12.2/ 12.2
 AVS: -39.2/ 44.0
 G6CX4: -30.0/ 40.0
 NBC3: 22.5/ 22.5
 Balmwin: 90.0/ 90.0
 Glen_DC: 90.0/ 90.0
 GU_NBCSG: 7.0/ 7.0
 Drayton: 0.0/ 0.0

ND Coal Fields (711):
 Avail Gens: 7126.6
 Total Gens: 6405.8
 Total Load: 2020.4
 Total Loss: 190.9
 Total Expt: 4194.0
 Indus Load: 0.0

ND Red Rvr Vly (710):
 Avail Gens: 403.7
 Total Gens: 237.0
 Total Load: 861.1
 Total Loss: 49.6
 Total Expt: -673.7
 Indus Load: 0.0

North Dakota (700)
 Avail Gens: 8841.6
 Total Gens: 7842.8
 Total Load: 4315.5
 Total Loss: 339.6
 Total Expt: 3186.3
 Indus Load: 0.0

NDEX_AC: 1561.1
 CUDC: 1063.2
 SQButteDC: 475.0
 MilesCityDC: 87.0
 East Bias: 129.9

Fargo_SVC MVAR:
 0 of 1 machines
 QMIN: 0.0
 QMAX: 0.0
 QGEN: 0.0
 MARG: 0.0 (Out:135.0)

WaterTownSVC MVAR:
 1 of 1 machines
 QMIN: -86.0
 QMAX: 124.4
 QGEN: -39.1
 MARG: -47.0 (Out:0.0)

SHUNTS:
 PrairieFSW MVAR: 40.0
 Shynnes30 MVAR: 80.0
 Ramsey230 MVAR: 60.0

Wilt-Bow
 NOT FOUND
 Lept-Akly
 32. MW
 Audb-Hubd
 89. MW

Inmn-WngR
 42. MW
 Alex-Dgls
 69. MW
 GLCH-WILM
 18. MW
 Kerk-kerk
 19. MW
 Mors-Grnf
 49. MW
 Camb-Grnf
 34. MW

Montecello: 568.0/ 568.0
 PrairieIsld: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_Isld: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Wilmarth: 22.0/ 22.0
 Holcomber: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 Jimfalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.0/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSTeam: 106.2/ 106.2
 MRiver: 49.9/ 49.9
 Blue_Lake: 316.4/ 489.2
 Inver_Hills: 300.0/ 300.0
 White: 106.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Co: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 WESTPIP: 1.6/ 8.3
 GMM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Jamesville: 0.0/ 5.0
 FLYCLD: 4.6/ 4.6
 BYLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 WRIde: 1.5/ 7.3
 ERIdge: 6.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 200.0/ 200.0
 G255: 50.0/ 100.0
 RIVERSIDE: 406.2/ 406.2
 RIVERFalls: 12.0/ 20.0
 SRIdge: 1.1/ 5.4
 G176: 100.0/ 100.0
 BR13: 95.9/ 287.5
 CHB3: 173.0/ 281.1
 GRNDMDW: 100.5/ 100.5
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UILK: 0.9/ 5.0
 FEP_ST: 100.0/ 100.0
 Park_City: 6.0/ 5.0
 HERC: 33.7/ 33.7
 StCloud: 6.7/ 6.7
 Main_ST: 26.0/ 26.0
 Rich_VR: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Bigfall: 5.0/ 7.7
 GNFCLY: 0.0/ 7.4
 LKCRYS: 0.0/ 5.8
 Madelville: 0.0/ 29.7
 Neulms: 0.0/ 80.6
 SLPY_MU: 0.0/ 6.6
 FARFXNU: 0.0/ 2.7
 MELASMU: 8.0/ 8.0
 KENYNVL: 0.0/ 5.4

Wilt-Bow
 NOT FOUND
 Lept-Akly
 32. MW
 Audb-Hubd
 89. MW
 Inmn-WngR
 42. MW
 Alex-Dgls
 69. MW
 GLCH-WILM
 18. MW
 Kerk-kerk
 19. MW
 Mors-Grnf
 49. MW
 Camb-Grnf
 34. MW

Montecello: 568.0/ 568.0
 PrairieIsld: 1044.0/ 1044.0
 King: 555.0/ 555.0
 Sherco: 2287.8/ 2291.0
 French_Isld: 28.0/ 28.0
 Red_Hing: 22.4/ 22.4
 Wilmarth: 22.0/ 22.0
 Holcomber: 35.2/ 35.2
 Cornell: 16.0/ 30.5
 Jimfalls: 56.5/ 56.3
 Riverside: 150.3/ 150.3
 Black_Dog: 548.0/ 548.6
 BFTG: 22.3/ 22.3
 LSP_CT: 177.3/ 177.3
 LSTeam: 106.2/ 106.2
 MRiver: 49.9/ 49.9
 Blue_Lake: 316.4/ 489.2
 Inver_Hills: 300.0/ 300.0
 White: 106.0/ 322.0
 WhiteG: 0.8/ 0.9
 Fenton: 68.0/ 136.0
 STP_Co: 25.0/ 25.0
 BFT: 50.6/ 50.5
 MEC: 351.0/ 372.0
 WESTPIP: 1.6/ 8.3
 GMM: 7.4/ 36.7
 FEP: 150.0/ 150.0
 Jamesville: 0.0/ 5.0
 FLYCLD: 4.6/ 4.6
 BYLSBY: 2.4/ 2.4
 KEYCT: 33.0/ 32.4
 WRIde: 1.5/ 7.3
 ERIdge: 6.0/ 10.0
 Colvill: 357.0/ 357.0
 HBR: 610.0/ 610.0
 G162: 200.0/ 200.0
 G255: 50.0/ 100.0
 RIVERSIDE: 406.2/ 406.2
 RIVERFalls: 12.0/ 20.0
 SRIdge: 1.1/ 5.4
 G176: 100.0/ 100.0
 BR13: 95.9/ 287.5
 CHB3: 173.0/ 281.1
 GRNDMDW: 100.5/ 100.5
 G609: 0.0/ 5.5
 NOB: 200.0/ 200.0
 UILK: 0.9/ 5.0
 FEP_ST: 100.0/ 100.0
 Park_City: 6.0/ 5.0
 HERC: 33.7/ 33.7
 StCloud: 6.7/ 6.7
 Main_ST: 26.0/ 26.0
 Rich_VR: 12.0/ 12.0
 Hurley: 0.0/ 0.0
 Blearth: 0.0/ 8.2
 Bigfall: 5.0/ 7.7
 GNFCLY: 0.0/ 7.4
 LKCRYS: 0.0/ 5.8
 Madelville: 0.0/ 29.7
 Neulms: 0.0/ 80.6
 SLPY_MU: 0.0/ 6.6
 FARFXNU: 0.0/ 2.7
 MELASMU: 8.0/ 8.0
 KENYNVL: 0.0/ 5.4

Minnesota Pwr (720):
 Avail Gens: 2814.2
 Total Gens: 1542.4
 Total Load: 1940.9
 Total Loss: 84.1
 Total Expt: -483.1
 Indus Load: 1117.4

STINSON
 30. MW
 ANG: 23.79
 AARONHEAD
 515. MW
 ANG: 0.00
 KNG-EauClr
 635. MW
 EauClr-Rrp
 455. MW

MWEX: 1149.5
 MWSI: 632.4
 TCEx: 266.9

Minn Wiscon (725)
 Avail Gens: 16189.3
 Total Gens: 12577.3
 Total Load: 14280.3
 Total Loss: 488.4
 Total Expt: -2198.9

Twin Cities (725):
 Avail Gens: 13375.1
 Total Gens: 11034.9
 Total Load: 12339.4
 Total Loss: 404.2
 Total Expt: -1715.7
 Indus Load: 289.7

ForbesCap MVAR:
 1 of 1 machines
 QMIN: -450.0
 QMAX: 400.0
 QGEN: 340.5
 MARG: 59.5 (Out:0.0)

SHUNTS:
 ForbesCap MVAR: 300.0
 Parning230 MVAR: 0.0
 RuckSLake MVAR: 0.0

Brk-White
 224. MW
 No-Sprack
 96. MW
 MJI-LK-FG
 365. MW
 Lrk-feld-345
 79. MW
 Rdnas-Hazel
 391. MW

RapidCityDC: -128.1
 Stegal DC: 107.6
 Sidney DC: 20.8
 SWING (MW): 954.3/ 1154.5
 SWING (MVAR): 495.5/ 200.0