Ontario-Michigan Interface PAR Performance Evaluation Report

Final

IESO, MISO, NYISO, PJM

1/16/2017

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Executive Summary

Introduction

This is the third in a series of studies that have investigated Phase Angle Regulator transformer (PAR) impacts on Lake Erie Circulation (LEC) flow. The first study was completed on June 1, 2011 (prior to commercial operation of the Ontario-Michigan PARs) and evaluated whether a correlation exists between operation of the PARs around Lake Erie (with the exception of the Ontario-Michigan PARs) and LEC along with other factors that may impact LEC (i.e. scheduled interchange vs. LEC). The 2011 study also known as the Regional Power Control Device Coordination (RPCDC) Study[1] was a joint effort between IESO, MISO, NYISO and PJM. The 2011 study considered a range of scenarios in determining where significant correlation might exist between LEC and historic operation of area PARs. Scenarios associated with the Ramapo PARs (5018 line) evaluated the direction of scheduled interface flows between PJM and NYISO, the direction of target flow for the 5018 line, and the Delta (Target-Actual) for the 5018 line with respect to LEC. It was observed that when PJM-NYISO interchange and the 5018 target flow were in opposite directions, there was a significant positive or strong positive correlation to LEC. Weak correlations were observed between LEC and St Lawrence and J5D PAR flows. Note: A strong observed correlation between variables does not necessarily imply that a causal relationship could exist. Further data analysis is required to determine causal relationships.

The 2011 study evaluated the correlations of PJM-NYISO, IESO-MISO, IESO-NYISO and PJM-MISO Scheduled Interchange versus LEC. The IESO-MISO Scheduled Interchange versus LEC indicated the highest level of correlation for the historical conditions evaluated. While none of these four scenarios show significant correlation by themselves, these Scheduled Interchanges do not occur in isolation from each other. By summing all of the average hourly interchanges on the four interfaces while taking into account the sign convention of Scheduled Interchange, a significant correlation was found between coincident Scheduled Interchange and LEC.

Finally, the 2011 study recommended that a future analysis be required to analyze LEC after the installation of the Ontario-Michigan PARs. The 2011 study considered two options for a future analysis: 1) reproduce analysis with similar scope to the 1999 MEN Study or 2) use an empirical analysis to evaluate PAR impacts on LEC and the interaction of tap movements between the PARs. The 2011 study reviewed the results and conclusions from the November 1999 MI-ONT Phase Angle Regulator Study – An Interregional Perspective conducted by the MAAC-ECAR-NPCC (MEN) Study Committee. After reviewing the MEN study, the 2011 study agreed that an empirical analysis would be the preferred option that would provide the most value in determining LEC correlations.

The second study was completed on February 11, 2014 by IESO, MISO and PJM and was intended to be the empirical analysis that evaluated the impact of installation of the Ontario-Michigan PARs on LEC as was recommended by the 2011 study[2]. The PARs on the Ontario-Michigan interface began regulating flow on the interface to schedule on April 5, 2012 after an amended Presidential Permit was approved by the DOE. Because of various outages involving the Ontario-Michigan PARs, the interface was not being controlled by a full set of PARs until July 18, 2012. To perform the empirical analysis, operating data was collected from August 1, 2012 through July 31, 2013. While this data represented a full year of Ontario-Michigan PAR operations, there existed a six month over-lap during the period when one of the Ramapo PARs was out of service (one of the Ramapo PARs was out of service from February 2013 until late December 2013). Since the one-year of operating data contained six

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[1] http://www.jointandcommon.com/~/media/committees-groups/stakeholder-meetings/pjm-miso-joint-common/postings/regional-power-control-device-study-report.ashx

[2] http://www.jointandcommon.com/~/media/pjm-jointcommon/downloads/ontario-michigan-interface-par-performance-evaluation-report.ashx

months during which there was not a fully functioning set of PARs on the PJM-NYISO interface, the data did not support a complete analysis of how the various power control devices around Lake Erie interact and of how the Ontario-Michigan PARs impact LEC. So while the 2014 study did not meet the 2011 study recommendation for an empirical analysis after the MI-ONT PARs were in-service, it does provide a benchmark whose results can be compared against the results of the third study that are detailed in this report with both Ramapo PARs in-service. Rather than review the 2014 study results in a stand-alone basis, we compare the results of the 2014 study with the 2016 study in this report to show how the effectiveness of the Ontario-Michigan PARs at managing LEC as well as the changes to LEC with fully functioning Ontario-Michigan and Ramapo PARs.

This 2016 study uses operating data from a period when both Ramapo PARs were in service (January 1, 2015 to December 31, 2015). This 2016 study duplicates the analysis that was performed as part of the 2014 study. The IESO-MISO Operating Agreement (IESO-MISO-C02) states that loop flow across the interface will be considered controlled when actual flow is within ±200 MW of scheduled flow. As part of the 2014 and 2016 analyses, LEC was calculated every 15 minutes to see whether the Ontario-Michigan PARs were successful at maintaining LEC within ±200 MW threshold. Because the Ontario-Michigan PARs require manual intervention to move a tap (not automatic), there is operator judgement as to whether a tap adjustment should be made once LEC goes outside the ±200 MW threshold or the operator does not believe a tap adjustment is warranted since they expect LEC to return within the ±200 MW threshold in the next several internals. So not only identifying the number of intervals when LEC was outside the threshold is important but also the number of consecutive intervals (duration) it is outside the threshold is also important. Brief excursions outside the threshold may indicate an operator decision to not adjust taps because LEC flows are expected to return within the threshold without the need for tap adjustments. Likewise, MISO has the ability to estimate LEC as if the Ontario-Michigan PARs had been returned to their neutral tap position (uncontrolled LEC). This estimation is based on a power flow analysis that MISO performs every 15 minutes in its real-time assessment of LEC. The power flow analysis is used to develop tap position response factors based on the then current system topology which allows an uncontrolled LEC to be determined. By comparing controlled LEC with uncontrolled LEC, a statistic on the effectiveness of the Ontario-Michigan PARs to return LEC to within the ±200 MW threshold can be determined. The three major items for both the 2014 study and the 2016 study that indicate whether Ontario-Michigan PARs are effective at managing LEC:

- Percent of time controlled LEC was outside the ±200 MW threshold.
- For those times controlled LEC was outside the ±200 MW threshold, was this due to an inability to control LEC or an operator decision to not make a tap movement since LEC was expected to return on its own as demonstrated by the duration LEC remains outside the threshold when there is still tap positions available.
- By comparing uncontrolled and controlled LEC, what percent of time was LEC outside the ±200 MW threshold and the PARs were successful bringing LEC back within the ±200 MW threshold versus the time LEC was naturally below the ±200 MW threshold and no tap adjustment was needed.

Conclusion

The 2016 study shows that PARs were able to keep Lake Erie loop flow (controlled LEC) within a ±200 MW control band during 76.6% of the 15-minute periods during the one-year study period. The simulated loop flow estimate without PAR control (uncontrolled LEC) would only have been within the control band for 52.1% of the year. This indicates the PARs reduced LEC from outside the ±200 MW threshold to within the ±200 MW threshold 24.5% of the year. Only 23.4% of the year, controlled LEC was outside the ±200 MW threshold.

The 2014 study with one Ramapo PAR out of service shows that PARs were able to keep LEC (controlled LEC) within ±200 MW control band during 73.1% of the 15 minute periods during the one year study period. The simulated loop flow estimate without PAR control (un-controlled LEC) would have been within the control band for 43.4% of the year. A comparison between the 2014 study and the 2016 study shows lower LEC (un-controlled LEC and controlled LEC were both lower in the 2016 study versus the 2014 study).

During most of the periods that the loop flow strayed outside the 200 MW bandwidth, the flow was over by a small margin and the flow was expected to return within the 200 MW bandwidth within the next few 15-minute periods.

- The 2016 study made an analysis of the periods that the loop flow stayed outside the ±200 MW bandwidth (23.4% of the year) to determine whether there was still enough tap positions available to return LEC to within the ±200 MW bandwidth in each of these intervals and found that to be true for all but 1.7% of the intervals. Theoretically, the PARs had the capability to control the loop flow within the 200 MW control bandwidth up to 98.3% of the year, although actual operation of the PARs did not produce a percentage of control that high.
- The analysis from the 2014 study found there was still enough tap positions available to return LEC to within the ±200 MW bandwidth up to 99.1% of the year.

Though loop flow spent a portion of the study year outside of the control band, the PARs provided benefit through correction at all times of excessive loop flow. The difference between the actual percent of time the interface was within the control band, and the theoretical capability (76.6% versus 98.3% for 2016 and 73.1% versus 99.1% for 2014) can be attributed to:

- the interface being in unregulated mode (PARs not available to fully control the interface) during certain periods of the year due to local congestion, unavailability of taps, or other factors,
- time delays between the time loop flow strays outside the 200 MW bandwidth and a manual tap movement is accomplished,
- operators' decision that a tap movement may not be warranted where Lake Erie loop flow is expected to return within the control band in a future 15 minute interval.

These two studies (the 2016 study and the 2014 study) demonstrate the MI-ONT PARs are very effective at controlling LEC within a ±200 MW threshold for roughly 75% of the year and has a theoretical capability to control LEC up to 99% of the year. These results demonstrate the Ontario-Michigan PARs are very effective at controlling LEC even with one Ramapo PAR out of service although having both Ramapo PARs in-service may result in reduced LEC.

Introduction

The intent of this evaluation report is to recount the actual performance of the Ontario-Michigan (ONT-MI) interface PARs over a one-year period during which the PARs were operational, and to provide insight into the effectiveness of the PARs in controlling Lake Erie Circulation (LEC) flow. This report follows from the Regional Power Control Device Coordination (RPCDC) Study report published in 2011 as a joint effort between IESO, MISO, NYISO, and PJM.

The RPCDC Study recommended a follow-up study (Second Study) be performed after the Ontario-Michigan PARs enter service and operational data had been collected for a year.

Lake Erie Circulation (LEC) Flow

LEC flow is the unscheduled flow of energy across the transmission system surrounding Lake Erie. LEC flow mainly affects entities in the IESO, MISO, NYISO, and PJM footprints. Conventionally, clockwise LEC flow is positive, counterclockwise flow is negative. LEC flow can be caused by many factors that are beyond the control of grid operators. A number of devices exist which can affect LEC flow, including PARs. The 2011 study found that operation of PARs around Lake Erie affects LEC, along with system topology, generation commitment, and the level of scheduled interchange. The analysis described in this report considered only the operation of PARs, and only those PARs on the ONT-MI interface between IESO and MISO.

Ontario-Michigan Interface

LEC flow is affected by several factors including PARs in multiple locations around Lake Erie (*see Figure 1*). This report considered data only for PARs on the Ontario-Michigan interface.

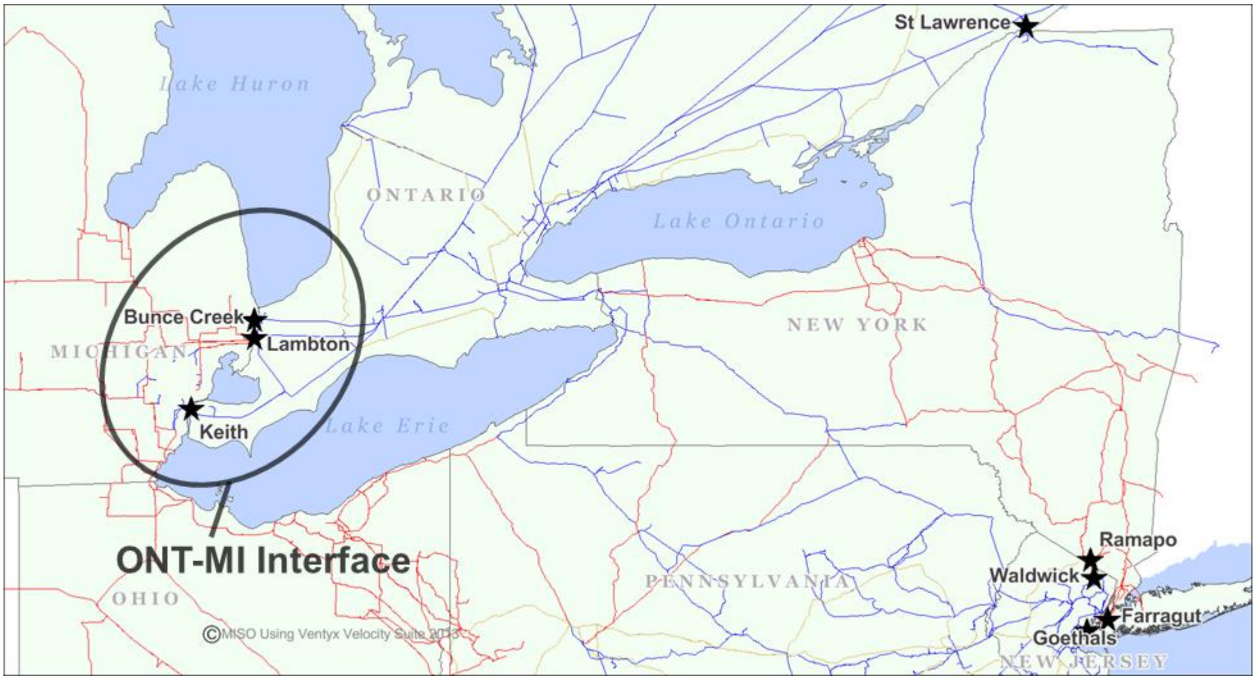

Figure 1 – PAR Locations Which Impact Lake Erie Circulation Flow

The ONT-MI interface is comprised of four 230 kV lines that connect ITC and IESO. Each line has a PAR device that may be placed in series with the circuit. The ONT-MI interface includes five PARs at three locations. PARs on the interface reside at Lambton (IESO), Keith (IESO), and Bunce Creek (ITC) (*see Figure 2*).

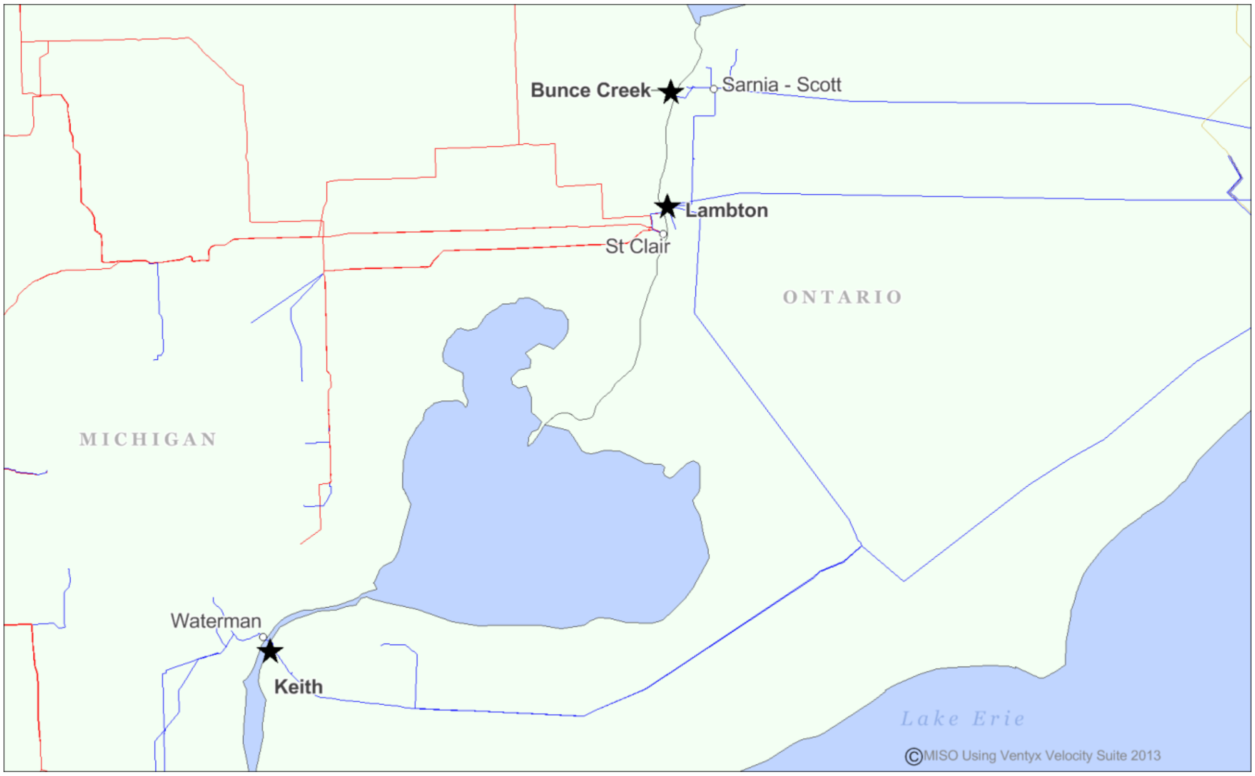

Figure 2 - PAR Locations on the ONT-MI Interface

Ontario-Michigan PARs

The ONT-MI interface PARs were designed to align actual flows with scheduled flows on the IESO-MISO interface. The equipment provides a large number of tap positions, providing for precise control, as well as the ability to adjust the tap positions intra-hour.

Summary of PARs on the ONT-MI interface:

At Lambton (IESO) *see Figure 3*
- **PS4** on circuit St. Clair (ITC)-Lambton (IESO) 230 (L4D)
- **PS51** on circuit St. Clair (ITC)-Lambton (IESO) 230 (L51D)

At Keith (IESO) *see Figure 4*
- **PSR5** on circuit Waterman (ITC)-Keith (IESO) 230 (J5D)

At Bunce Creek (ITC) *see Figure 5*
- **PST1** and **PST2** in series on circuit Bunce Creek (ITC)-Scott (IESO) 230 (B3N)

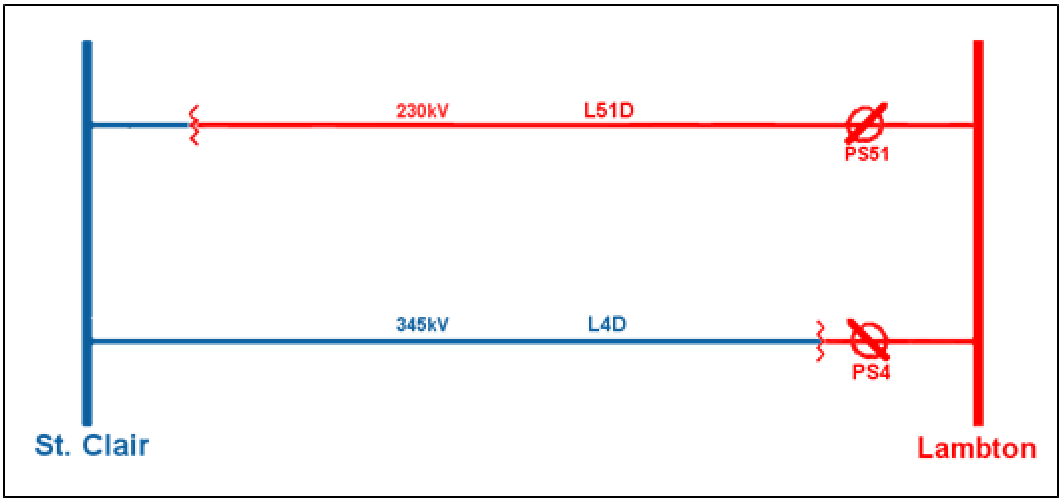

Figure 3 - Lambton PS4 and PS51

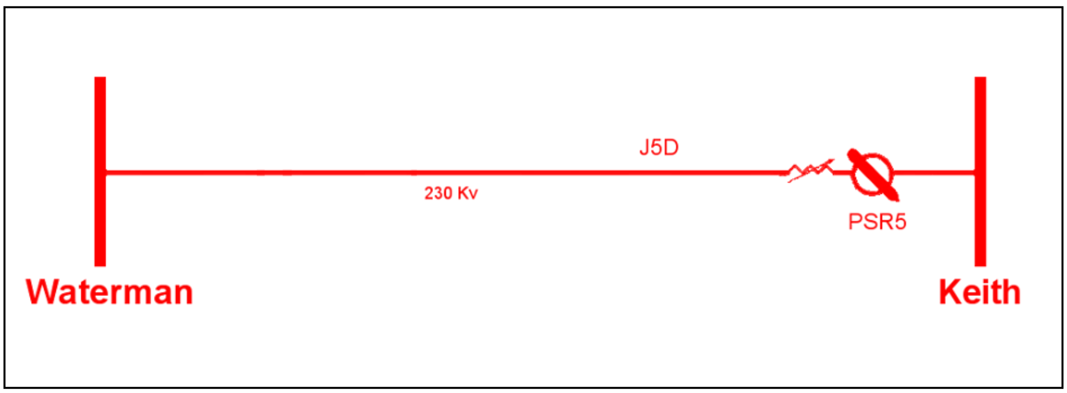

Figure 4 - Keith PSR5

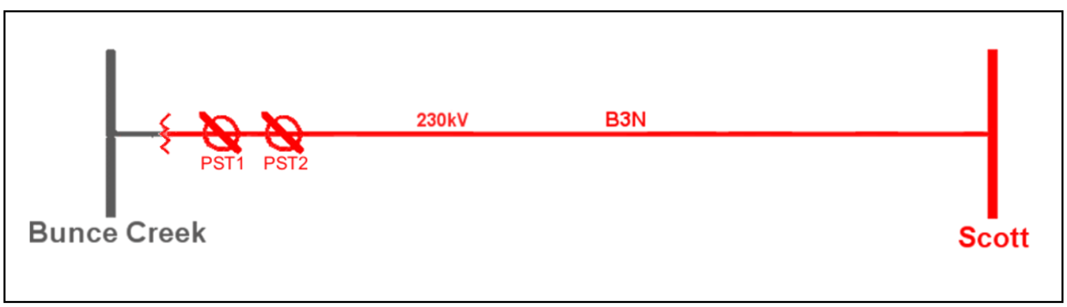

Figure 5 - Bunce Creek PST1 & PST2

Lambton PS4 & PS51 (L4D/L51D)

The PS4 and PS51 PARs at Lambton each have ±32 tap positions from neutral, with the ability to adjust phase angle by approximately ±45°. PS4 is in series with the Lambton (IESO)-St. Clair (ITC) 230 (L4D) circuit, and PS51 is in series with the Lambton (IESO)-St. Clair (ITC) 230 (L51D) circuit. PS4 and PS51 each have a tap change limit of 56 tap changes in a 15-minute period. If that limit is met, the PAR enters a three-hour cool down period during which it may change one tap every two minutes.

Keith PSR5 (J5D)

The PSR5 PAR at Keith has ±18 taps positions from neutral, with the ability to adjust phase angle by approximately ±30°. PSR5 is in series with the Keith (IESO)-Waterman (ITC) 230 (J5D) circuit. No limit is identified for the number of tap changes that may be requested for PSR5 in a given time period.

Bunce Creek PST1 & PST2 (B3N)

The PST1 and PST2 PARs at Bunce Creek in IESO are in a series configuration. Each PAR has ±16 tap positions from neutral, with the combined ability to adjust phase angle by ±45°. No operational limit is identified for the number of taps that PST1 and PST2 may change in a given time period, but these PARs must be within one tap position of each other when both are in service.

Summary of Ontario-Michigan Interface Operations

Ontario-Michigan PARs

Since July 2012, all five Ontario-Michigan PARs have regularly been in service and providing flow control. Operation of the PARs is intended to align actual flow to scheduled flow. As described in this analysis, the combined ONT-MI interface PARs have the ability to offset approximately 800 MW of LEC flow (based on the maximum observed total PAR control capability during the analysis period with all PARs in service).

Modes of Operations

The interface may be operated in Regulated, Unregulated, or Bypass mode. In Regulated mode, the PARs are in service with enough expected capability to control LEC. In Unregulated mode, the PARs are in service but are not expected to be able to control LEC within the control band. This may occur if the devices are at max tap or system conditions preclude the devices from fully controlling the interface. In Bypass mode, the interface has no flow control capability. Bypass mode can be set if all the PARs are physically bypassed or if all the PARs are in service and near neutral tap position without intent to control flow.

Transitions from Regulated to Unregulated Mode

The interface may be move from Regulated to Unregulated mode for a variety of reasons, including local congestion, PARs at max tap, and/or unavailability of one or more PARs. An outage of a PAR may limit loop flow correction, but would not necessarily eliminate loop flow control capability for the entire interface.

Tap Changes

Adjustment of PAR tap positions is not automatic and must be performed manually. Tap adjustment begins with a blast call between IESO, MISO, Hydro One, ITC TO, and ITC LBA (MECS). Mutual agreement from all parties is required to initiate a tap change. Operation of the ONT-MI interface PARs is coordinated under the instruction of document IESO-MISO-C02, “Operation of the Ontario-Michigan Tie Lines and Associated Facilities.”

Using the PARs to Control LEC

Operator action is taken to control LEC flow when unscheduled flow exceeds 200 MW in either direction. When LEC flow exceeds, or is expected to exceed, the control band, operators would initiate a tap change with the intent to bring flow back within the control band. As the operation of the PARs is not automatic, operator judgment plays a large part in control. Operators may also assess the trajectory of LEC flow to determine the likelihood that flow will return to within the control band without direct intervention.

Data Analysis

Data was analyzed for one full year during which the ONT-MI PARs were in service. The period analyzed was from 1/1/2015 to 12/31/2015. Data included in the analysis is listed in Table 1. Several values were calculated from the data in Table 1. The principal measures used in the analysis are the LEC Flow, and the LEC Flow without PAR Control. A selection of derived values is listed in Table 2. To estimate the LEC Flow without PAR Control, a calculation was performed for each 15-minute period based on the MISO Real-Time State Estimator snapshot for that period. Using the snapshot in a PSSe simulation, each PAR was adjusted by one tap, and the impact on the interface was recorded. Using this calculated shift factor for each PAR and the actual interface flow values, the estimated flow on the interface was determined by multiplying the shift factor for one tap position by the number of taps required to return the PAR to neutral position, then summing the result for all PARs and adding to the actual LEC flow. To simplify the calculation, a linear relationship between tap change and MW flow change is assumed. In actual operation, the impact may be reduced as the PAR approaches either end of its tap range.

Table 1 - Data Included in Analysis

Data Value	Description
IESO Total Interface Flow	15 Minute Average
IESO Total Interface Schedule	15 Minute Average
Interface Regulation Status	Manually Entered by IESO Operator
B3N Actual Tap	Tap position of PST1 & PST2 at Bunce Creek
L4D Actual Tap	Tap position of PSR4 at Lambton
L51D Actual Tap	Tap position of PSR41 at Lambton
J5D Actual Tap	Tap position of PSR5 at Keith
B3N Circuit Flow	15 Minute Average
L4D Circuit Flow	15 Minute Average
L51D Circuit Flow	15 Minute Average
J5D Circuit Flow	15 Minute Average
MISO State Estimator Snapshots	15 Minute Snapshot of MISO State Estimator

Table 2 – Selected Calculated Values

Calculated Value	Calculation
Lake Erie Circulation Flow	Total Interface Flow - Total Interface Schedule
Lake Erie Circulation Flow w/o PAR Control	Lake Erie Circulation Flow + $\sum(\text{PAR Shift Factors} * \text{PAR offsets})$
Individual PAR Shift Factors	Move each PAR one tap, calculate $\sum \frac{\text{MW}_{\text{post}} - \text{MW}_{\text{pre}}}{1 \text{ tap}}$ for all circuits

For the one-year period reviewed, a tap change was determined to have taken place if the tap position at time *t* did not equal the tap position at time *t-1*. The initiating operator actions were not available for all occasions and were not considered in the analysis.

Results

The PAR data demonstrated a noticeable improvement in the control of LEC flow when the PARs were being used to control flow. During the one-year period, the estimated loop flow without PAR control would be within the ±200

MW control band for 52.1% of the year. In comparison, the actual loop flow with PAR control was within the ±200 MW control band for 76.6% of the year, an improvement of more than 47% over the estimated value without PAR control. Figure 6 demonstrates the performance of the PARs on a monthly basis by comparing the magnitude of the actual loop flow to the estimated loop flow without PAR control.

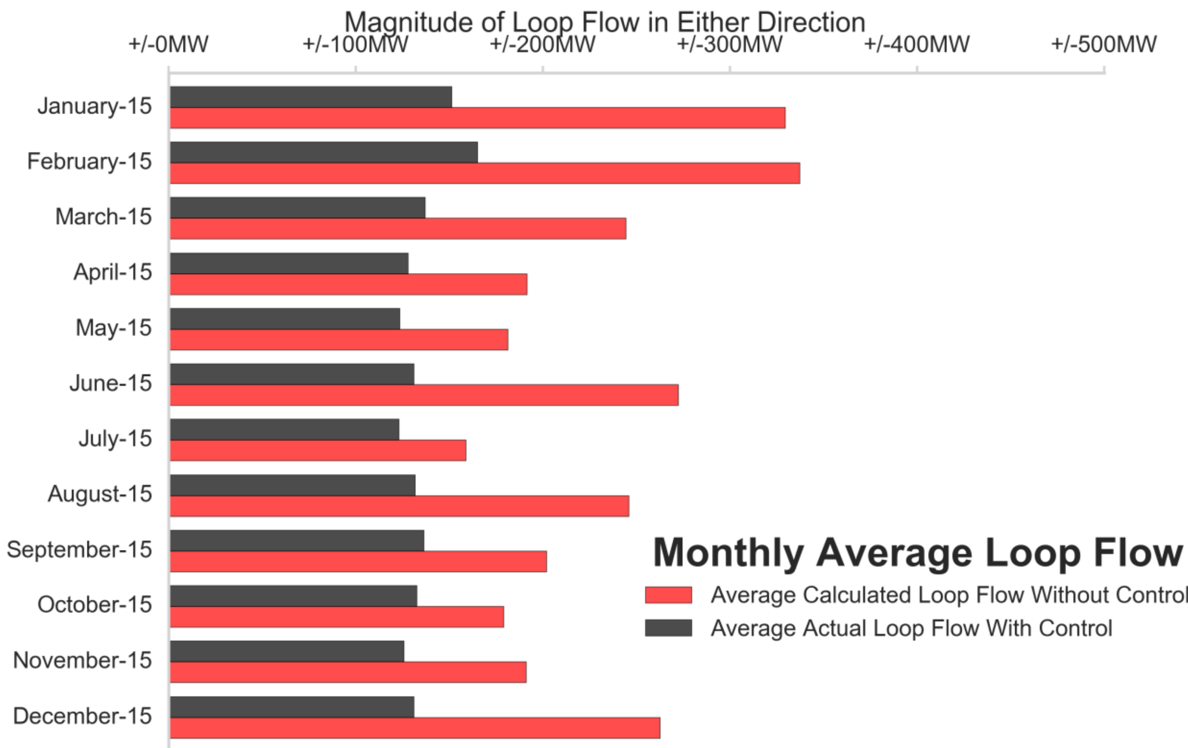

Figure 6 - Monthly Average Loop Flow

MISO and IESO listed the interface as Unregulated for 1.7% of the year. This corresponds to the periods of time that the operators determined there was not enough PAR control to keep the interface within the 200MW bandwidth. Based on actual LEC flow, the interface was outside the 200MW bandwidth 23.4% of the year. Of the 23.4%, the interface was listed in the Unregulated mode 0.8% of the time. The PARs had enough theoretical control capability for a majority (21.0%) of the remaining 22.6% of the time, had tap changes been performed. This is also true for a portion (0.8%) of the time that the interface was listed as Unregulated.

Based on the observed loop flow and the calculated PAR shift factors, the PARs did not have sufficient capability to control LEC flow to within the control band for 1.7% of the year. This was determined by evaluating every 15-minute interval that loop flow exceeded the ±200MW bandwidth, and then utilizing the calculated PAR shift factors and all available tap positions on the PARs to conclude if enough control was available to bring the interface to within the control band when ignoring congestion. Of this 1.7%, the interface was listed as Regulated for 1.6% and Unregulated for 0.1% of the year. Therefore, enough theoretical capability to control loop flow within 200MW bandwidth was available during 98.3% of the study year.

The remaining 21.0% of the year (22.6% - 1.6% = 21.0%) that the interface was listed as Regulated and still outside of the 200 MW control band is attributed to a combination of reasons. Those include, but are not limited to large schedule changes, local congestion, unavailability of taps, delay time as PAR taps moved, operator judgment that LEC flow will return to within the control band without intervention, and other operational factors. Table 3 lists the portions of the year that LEC flow was in each state.

Table 3 - LEC Flow Within Control Band vs. Outside Control Band

Interface Status	±200MW Control Band	Percent of Year	
Regulated[3]		**98.3%**	
	Within Control Band		75.7%
	Outside Control Band		22.6%
Unregulated		**1.7%**	
	Within Control Band		0.9%
	Outside Control Band		0.8%
		100.0%	100.0%

LEC flow spent more time within the ±200 MW control band with PAR control (76.6%) than was calculated without PAR control (52.1%). The histogram in Figure 7 shows the number of 15-minute average periods which were spent at each flow magnitude. The tall, narrow shape of the actual loop flow curve (black O's) indicates that the interface spent more time within the ±200 MW control band. The shorter, flatter curve of the calculated loop flow without control (red +'s) indicates that less time would have been spent within the control band and more time would have been spent at higher flow levels without PAR control. The calculated loop flow curve is roughly symmetrical around zero with no clear bias towards either clockwise or counterclockwise loop flow. This is likely a result of control by other PARs around Lake Erie. The actual loop flow is also symmetric around 0 MW flow, which implies that PAR control was effective to control loop flow in both directions.

[3] This reflects the percent of the year MISO and IESO set the PARs to "Regulated" in NERC's Interchange Distribution Calculator (IDC).

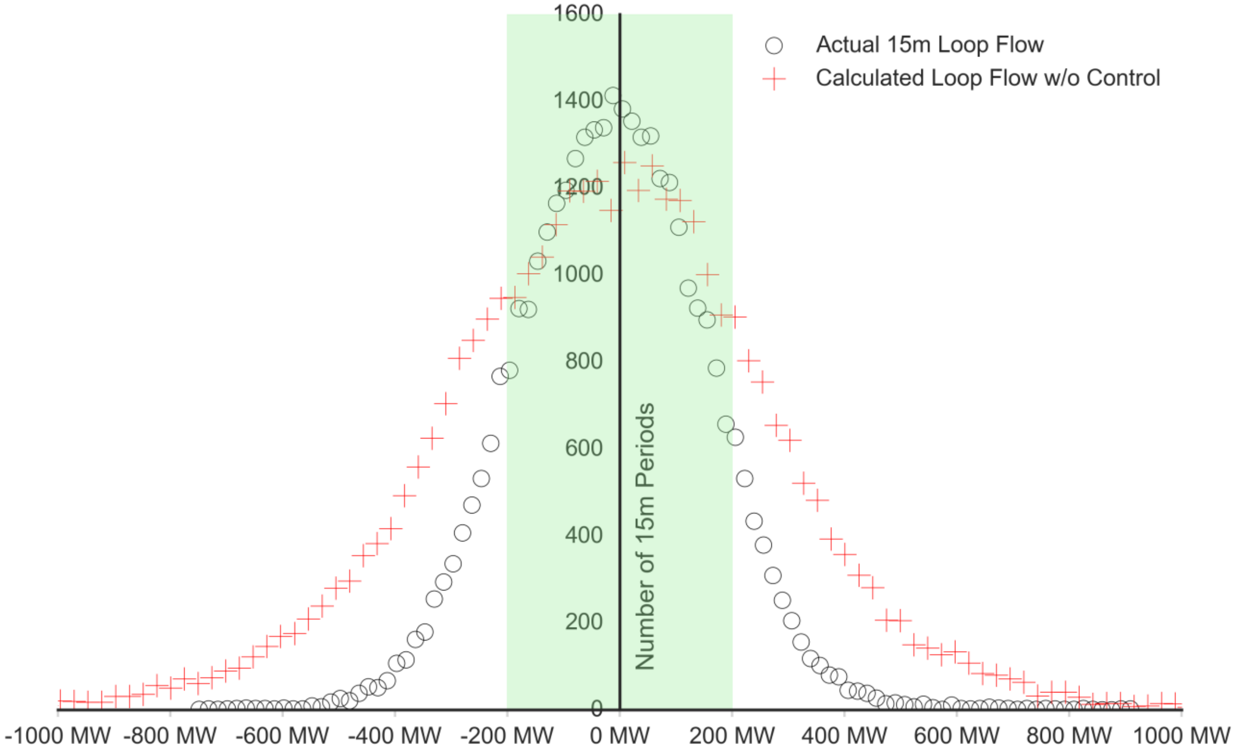

Figure 7 - Histogram of 15 Minute Periods vs Actual and Calculated Loop Flow

The interface exceeded the control band on 5,127 separate occasions during the year, compared to an estimated 4,169 occasions if the PARs had not been controlling flow. For the purposes of analysis, an "occasion" is considered to be a continuous interval of one or more 15-minute periods. Though the number of occasions is greater with PAR control, the duration of each occasion was shorter, and the magnitude of the unscheduled flow was smaller during each occasion. More occasions should be expected when the interface is controlled since the LEC flow will spend more time near the ±200 MW control band and will therefore cross the threshold more often. For comparison of duration and magnitude of occasions, see *Figure 8* through *Figure 11*. These plots show the magnitude of flow at each duration level. While the durations and magnitudes are spread widely without control (*Figure 9*), they are well grouped with control (*Figure 8*) in the region with short duration and low magnitude. Each duration interval of an occasion is plotted as a separate point, so sequential points would be connected to form a time sequence. Most of the high magnitude and long duration points occur within the same occasion, as shown by the set of line plots in *Figure 10*. The three longest occasions are shown by themselves in *Figure 11*. The inverse relationship between duration and magnitude for most points implies that the PARs were operated effectively, whether they were moved to control flow, or not moved in anticipation that flows would return within limits.

The time-series actual LEC flow (*Figure 12*) compared to the estimated LEC flow without PAR control (*Figure 13*) for the same period demonstrates the increase regularity on the interface with PAR control in place. If the time points where the interface was within the ±200 MW control band are removed (*Figure 14* and *Figure 15*), a clearer picture of the PAR contribution is shown. *Figure 14* and *Figure 15* also identify the times when the LEC was outside the control band and available taps were insufficient to bring flow back within the control band. Investigation of the occasions when the PARs were insufficient to control LEC show that most occasions ended with the operator moving the interface to Unregulated status.

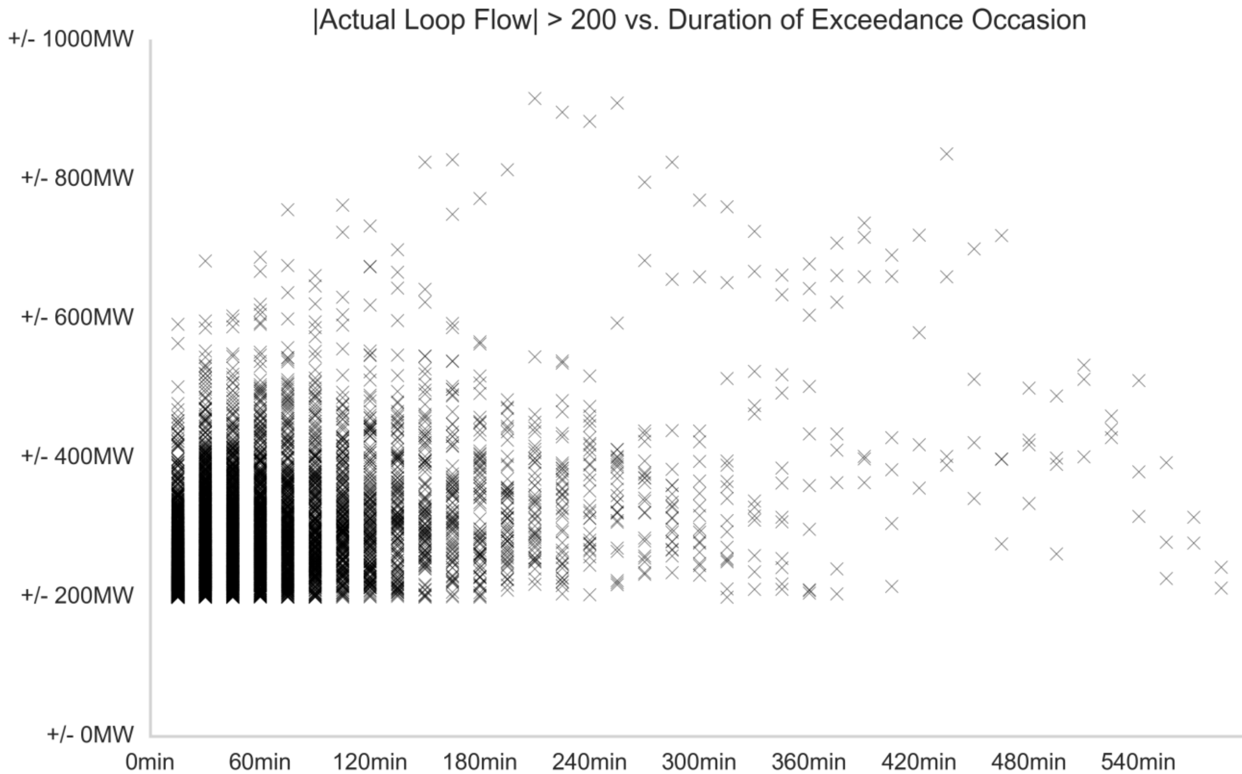

Figure 8 - |Actual Loop Flow| vs. Duration of Unregulated Occasion

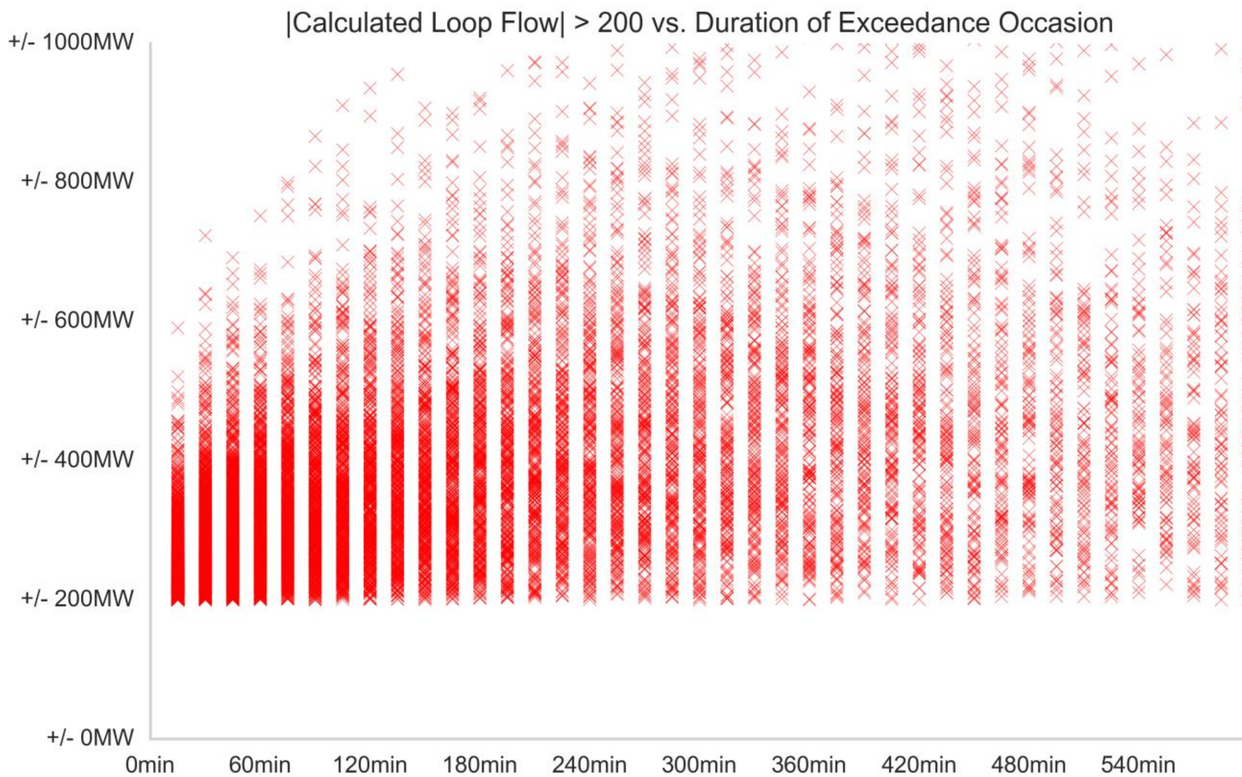

Figure 9 - |Calculated Loop Flow| vs. Duration of Unregulated Occasion

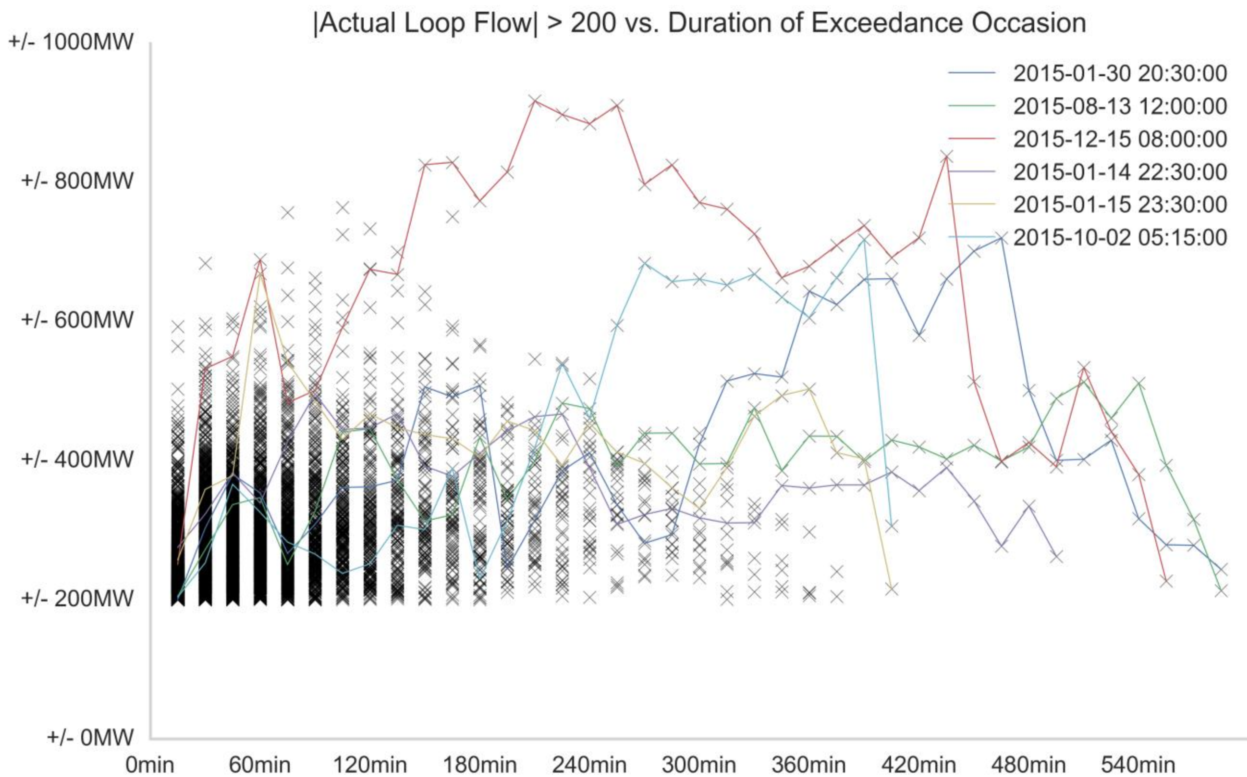

Figure 10 - |Calculated Loop Flow| vs. Duration of Unregulated Occasion, Individual Occasions Demarcated

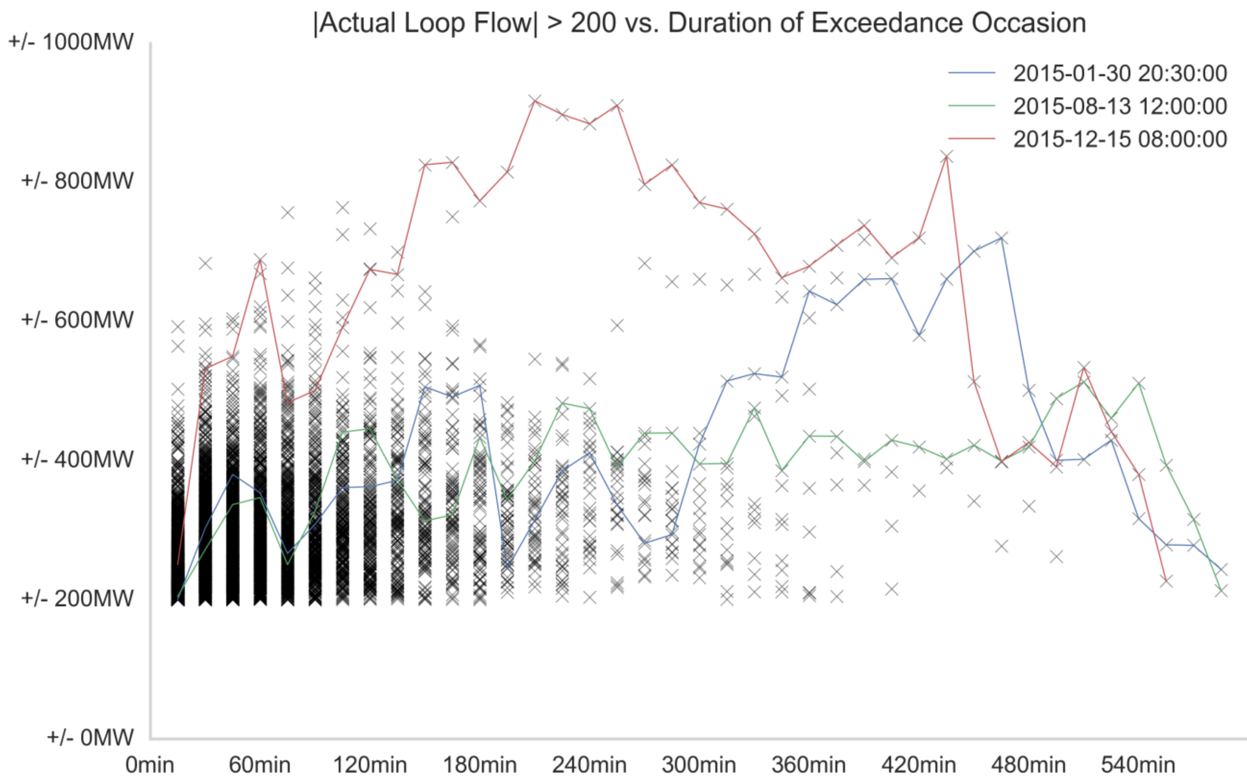

Figure 11 - |Calculated Loop Flow| vs. Duration of Unregulated Occasion, Three Occasions Demarcated

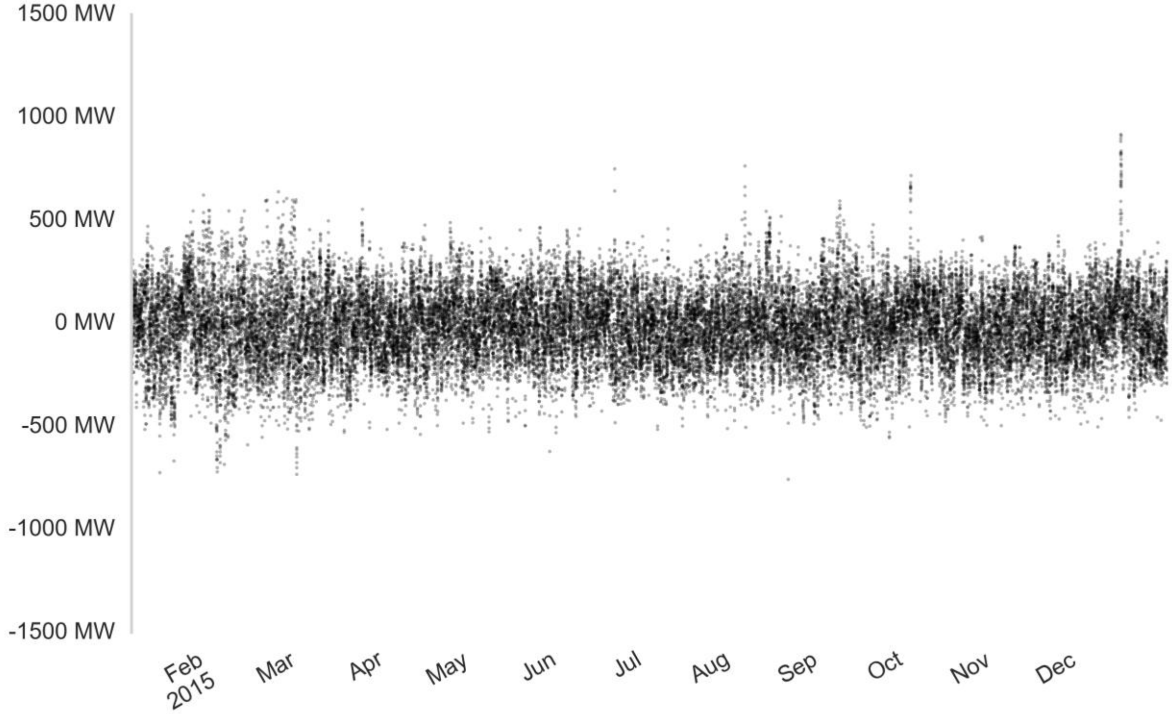

Figure 12 - Actual Loop Flow, 1/1/2015-12/31/2015

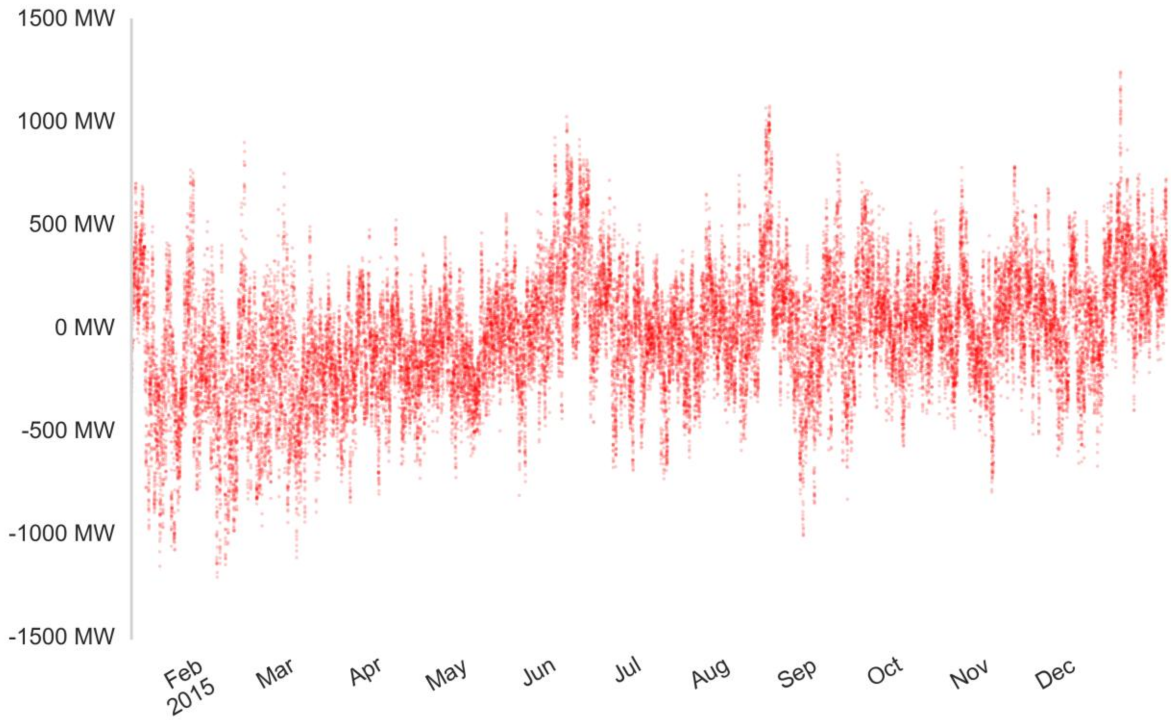

Figure 13 - Calculated Loop Flow without PAR Control, 1/1/2015-12/31/2015

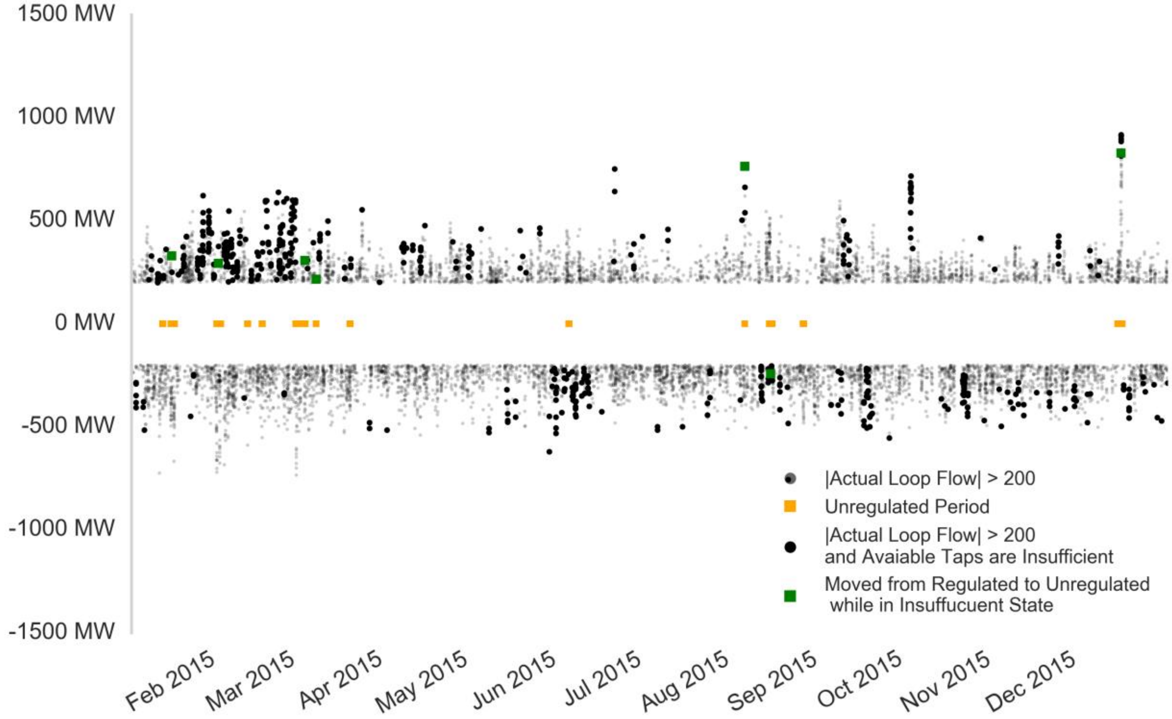

Figure 14 - Actual Loop Flow Outside +/-200MW, 1/1/2015-12/31/2015

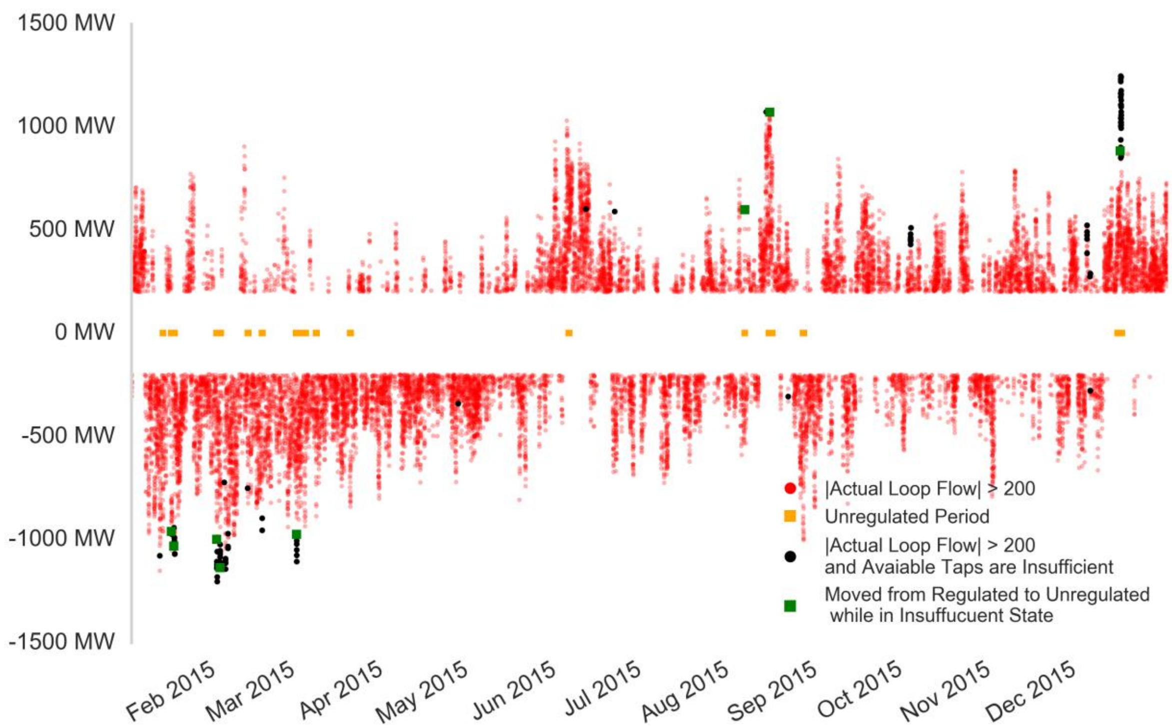

Figure 15 - Calculated Loop Flow without PAR Control Outside +/-200MW, 1/1/2015-12/31/2015

Recommendations

As documented in this report, the ONT-MI PARs have been found very effective at controlling LEC within a ±200 MW threshold (both with and without one of the Ramapo PARs out of service) and may result in reduced LEC having both Ramapo PARs in-service. Based on this analysis, the 2016 study meets the recommendation in the 2011 study that an empirical analysis be performed based on one year of operating data that reflects the installation of the Ontario-Michigan PARs to evaluate PAR impact on LEC and the interaction of tap movements between the PARs.

This 2016 study did not attempt to identify coordination of all controllable devices around Lake Erie in such a manner to control LEC since it found that LEC is being successfully controlled. If, in the future, the parties to this analysis (IESO, MISO, NYISO and PJM) determine that LEC is not being successfully controlled then, at that time, the parties may mutually agree to perform an analysis that looks at the coordination of all controllable devices around Lake Erie to manage LEC.