

Operations Performance Metrics Monthly Report



February 2012 Report

Operations & Reliability Department New York Independent System Operator

Prepared by NYISO Operations Analysis and Services, based on settlements initial invoice data collected on or before March 8, 2012.

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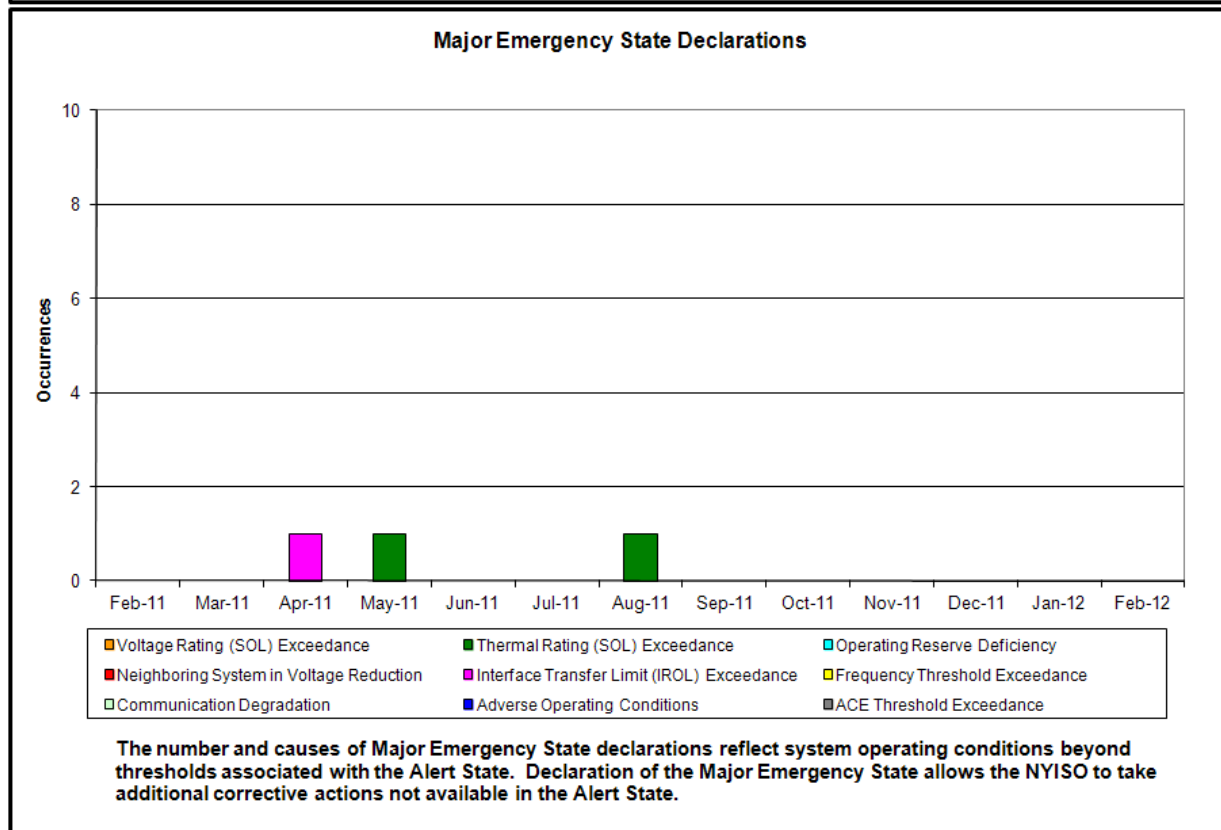
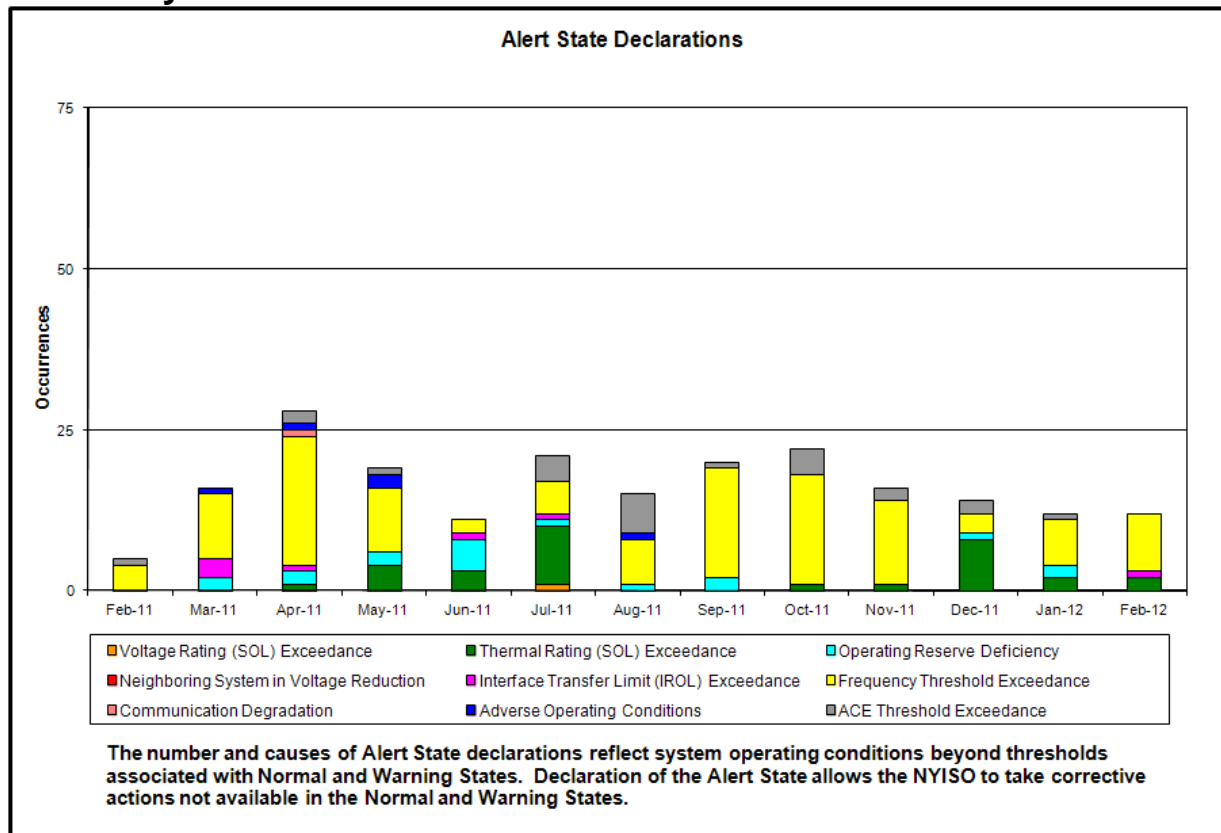
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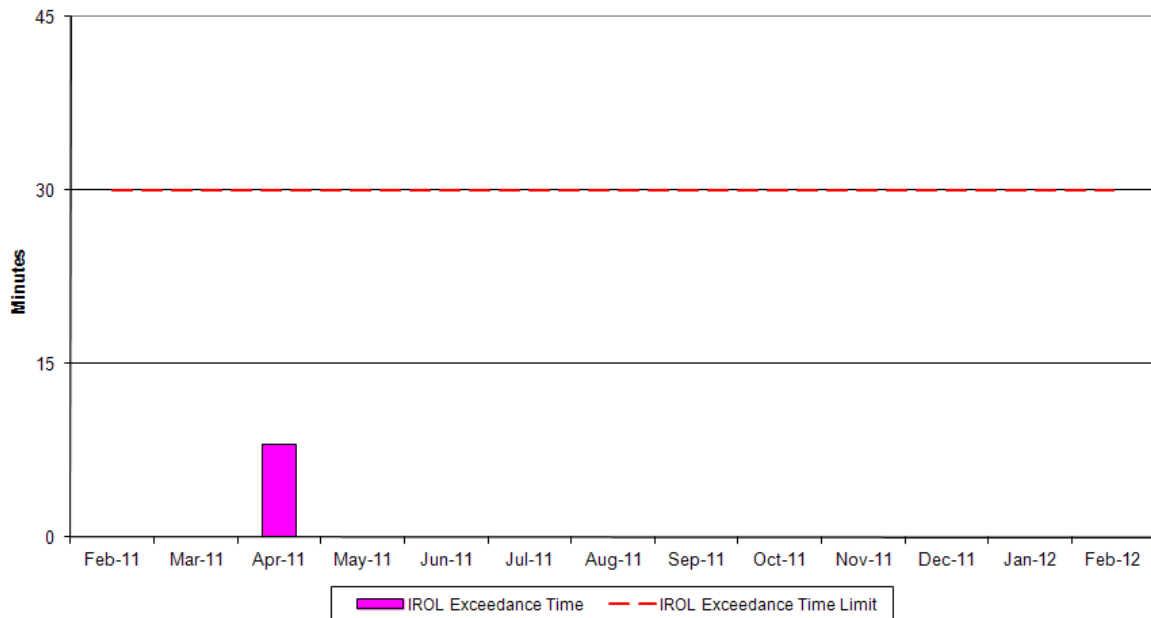
February 2012 Operations Performance Highlights

- Peak load of 22,131 MW occurred on 2/8/2012 HB 18
- All-time winter capability period peak load of 25,541 MW occurred on 12/20/2004 HB 17
- 0 hours of Thunder Storm Alerts were declared.
- **Clockwise Lake Erie Loop Flows**
 - 156 hours of NERC TLR level 3 curtailments
- Interface pricing deployed with non-conforming mode modeled for February-April 2012

Reliability Performance Metrics

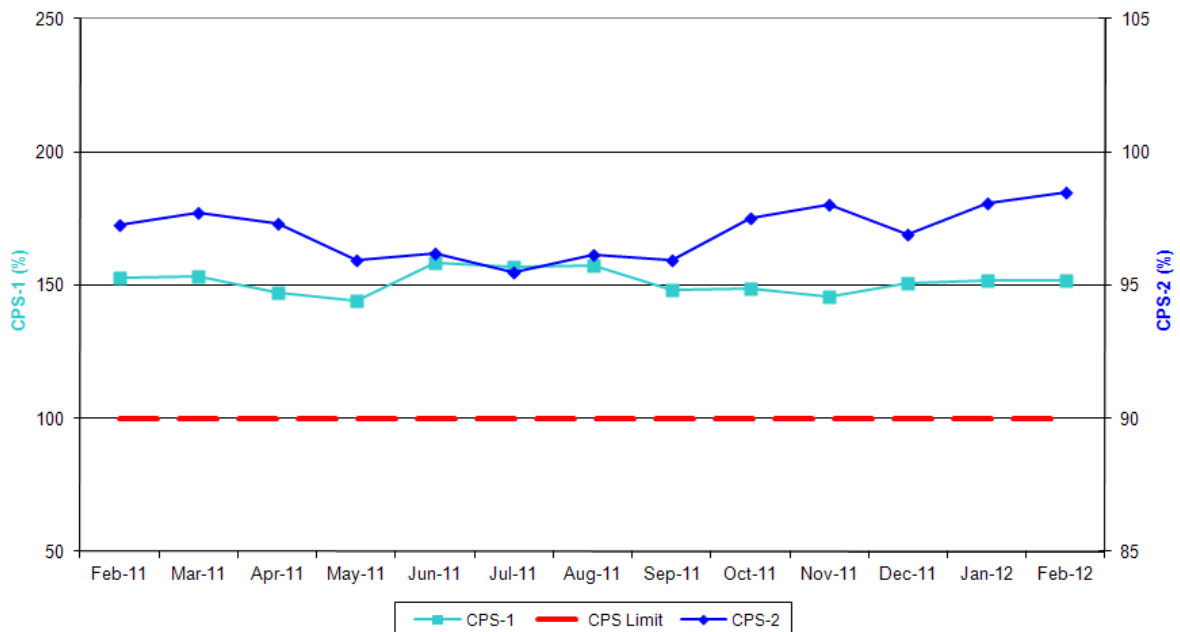


NERC IROL Time Over Limit



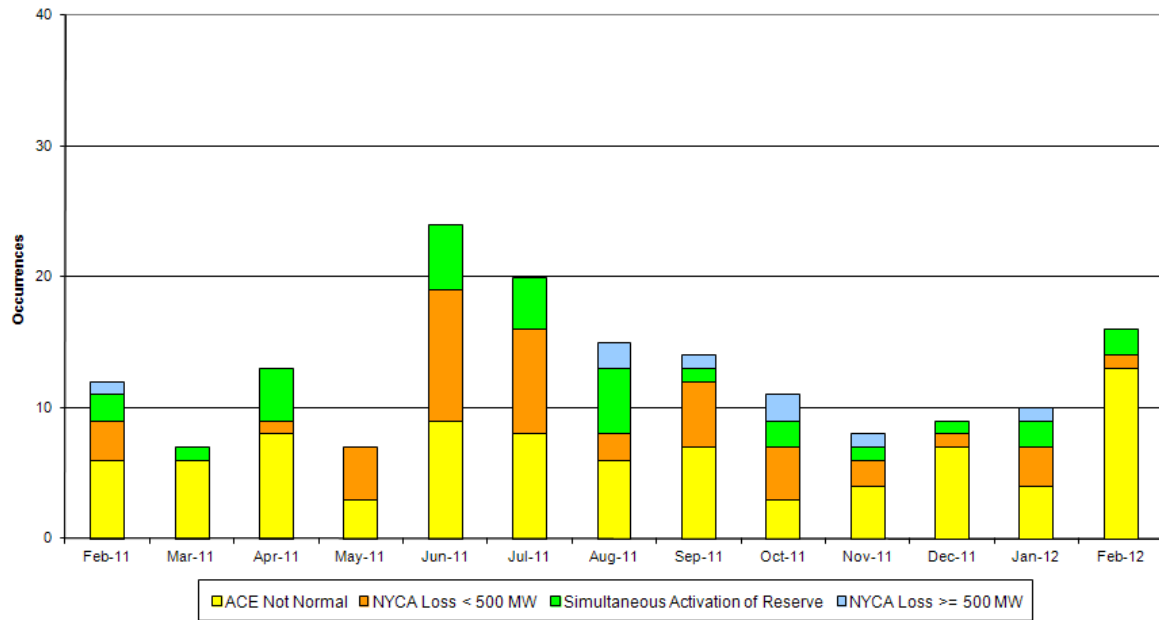
For IROL exceedances leading to Major Emergency State declarations, the maximum IROL exceedance time is identified. IROL exceedances of less than thirty minutes are considered NERC compliant.

NERC Control Performance Standards



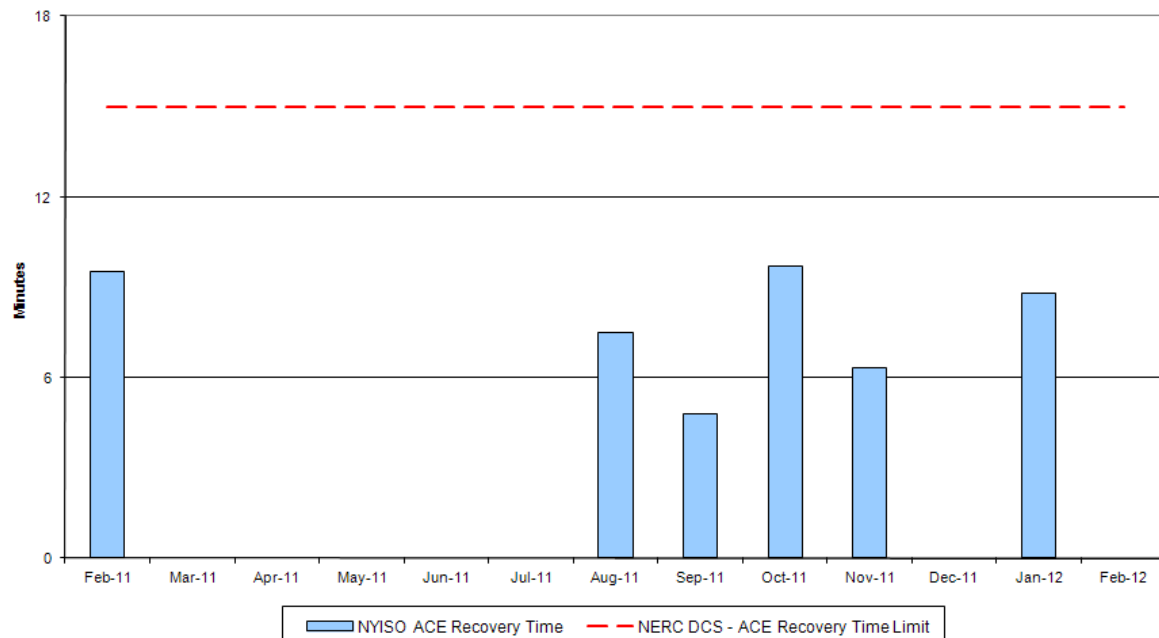
The values of NERC Control Performance Standards (CPS-1 and CPS-2) are indicators of the NYISO Area resource and demand balancing. Values exceeding the identified thresholds are NERC compliant.

Reserve Activations



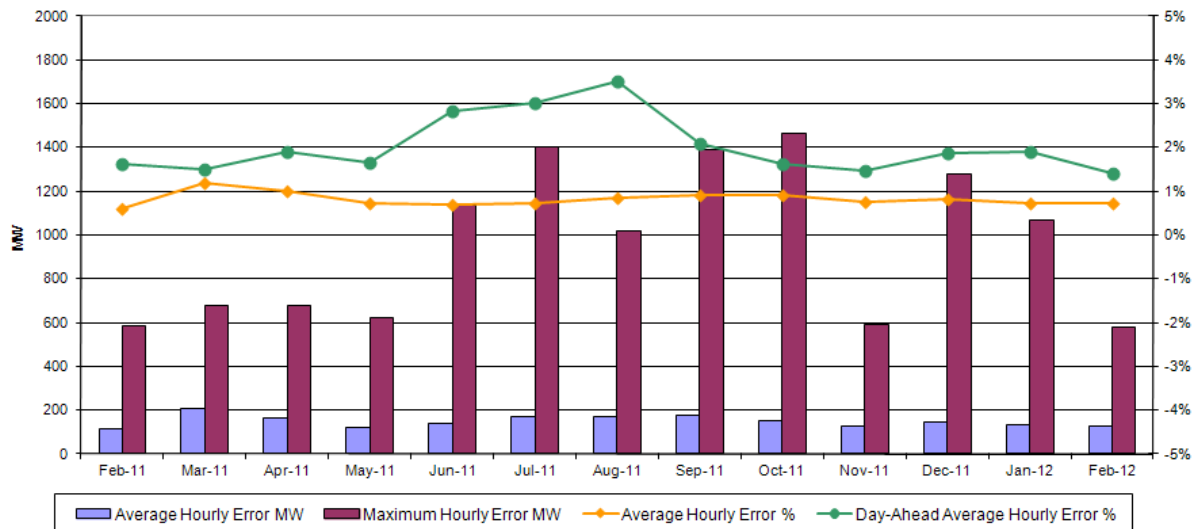
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Shared Activation of Reserves) by activating an immediate resource and demand balancing operation.

DCS Event Time to ACE Recovery



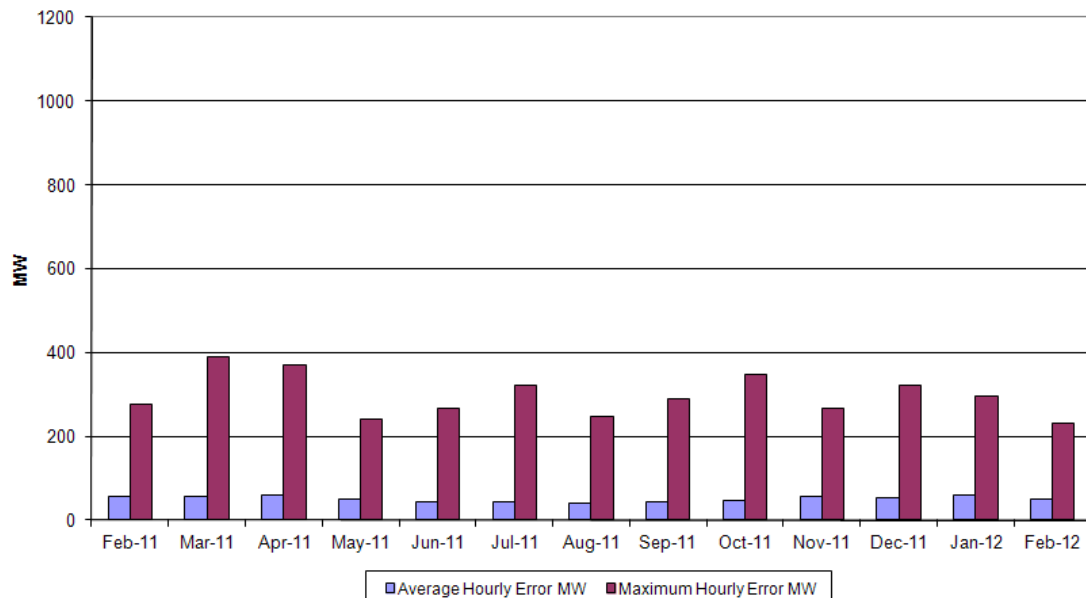
For NYISO initiated Reportable Disturbances, the maximum ACE recovery time is identified. Recovery times of less than 15 minutes are considered NERC compliant.

Load Forecast Performance



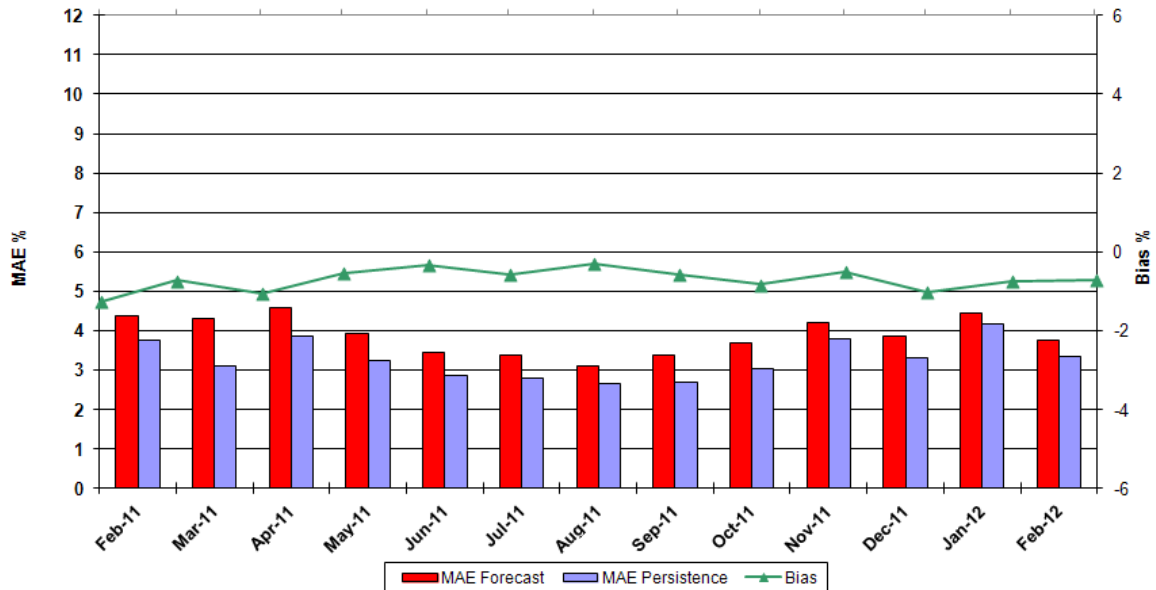
Hourly Error MW - Absolute value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.
Average Hourly Error % - Average value of the ratio of hourly average error magnitude to hourly average actual load demand.
Day-Ahead Average Hourly Error % - Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.

Wind Forecast Performance Hour Ahead MW Error



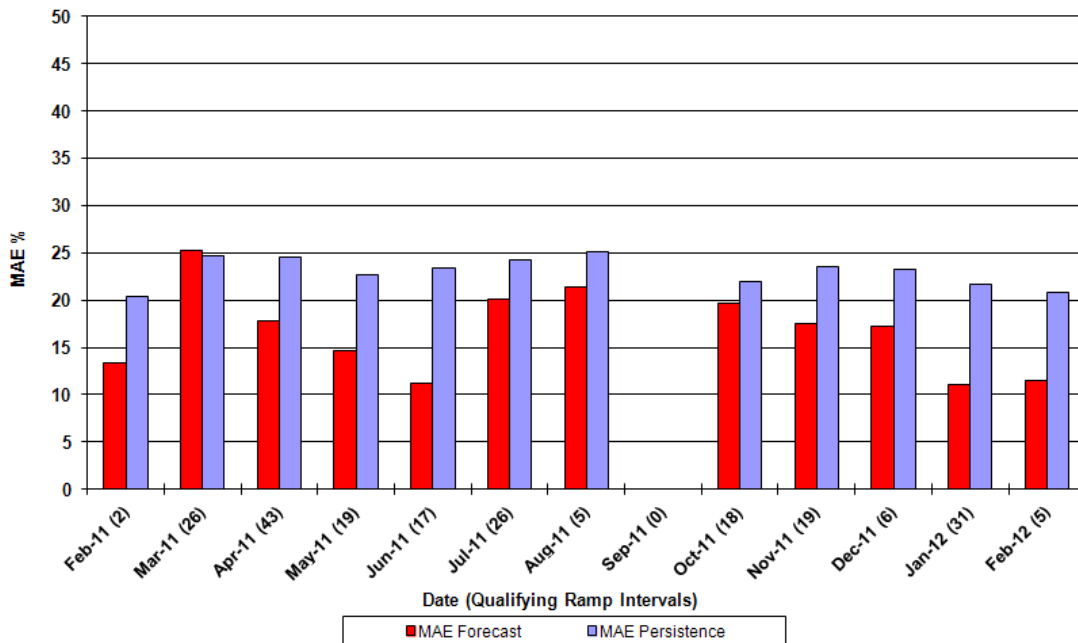
Hourly Error MW - Absolute value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.

**Wind Forecast Performance
Hour Ahead Percent Error
Wind capacity 1396MW**

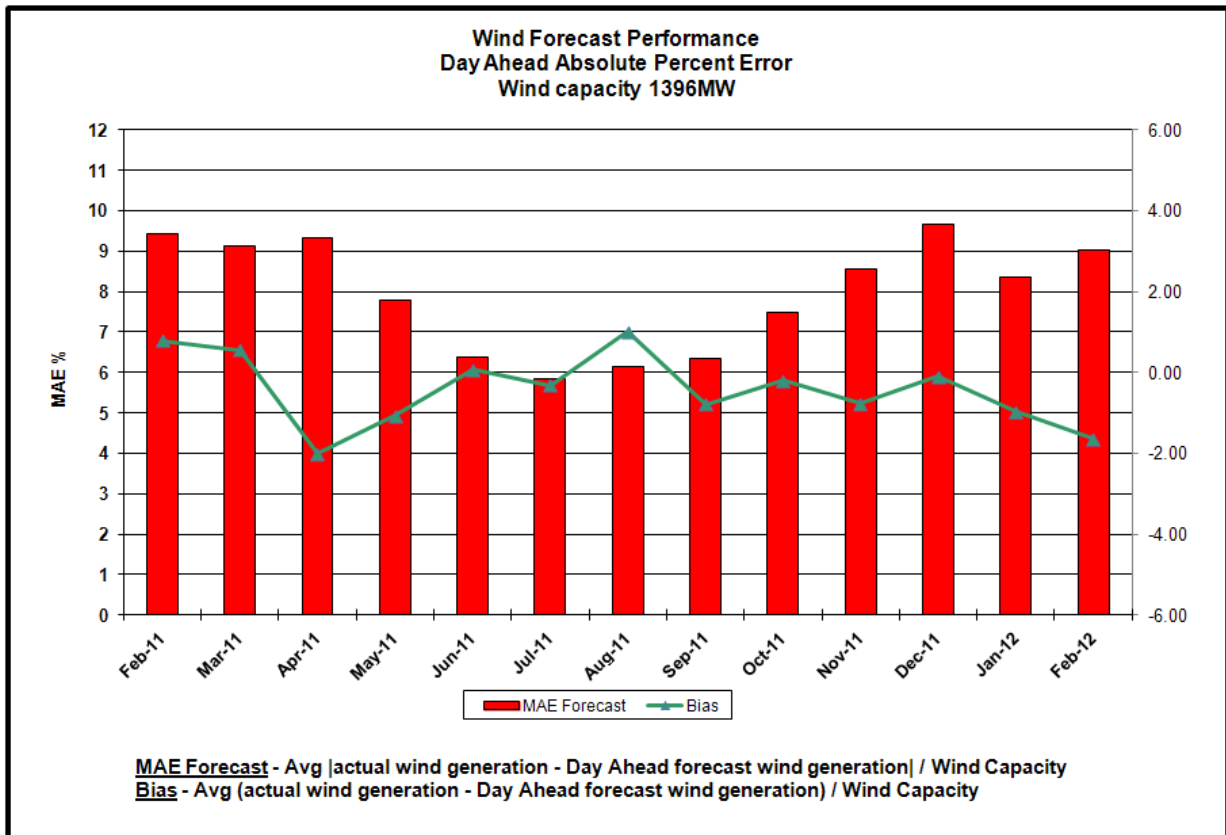


MAE Forecast - Avg |actual wind generation - hour ahead forecast wind generation| / Wind Capacity
MAE Persistence - Avg |actual wind generation - hour ahead actual wind generation| / Wind Capacity
Bias - Avg (actual wind generation - hour ahead forecast wind generation) / Wind Capacity

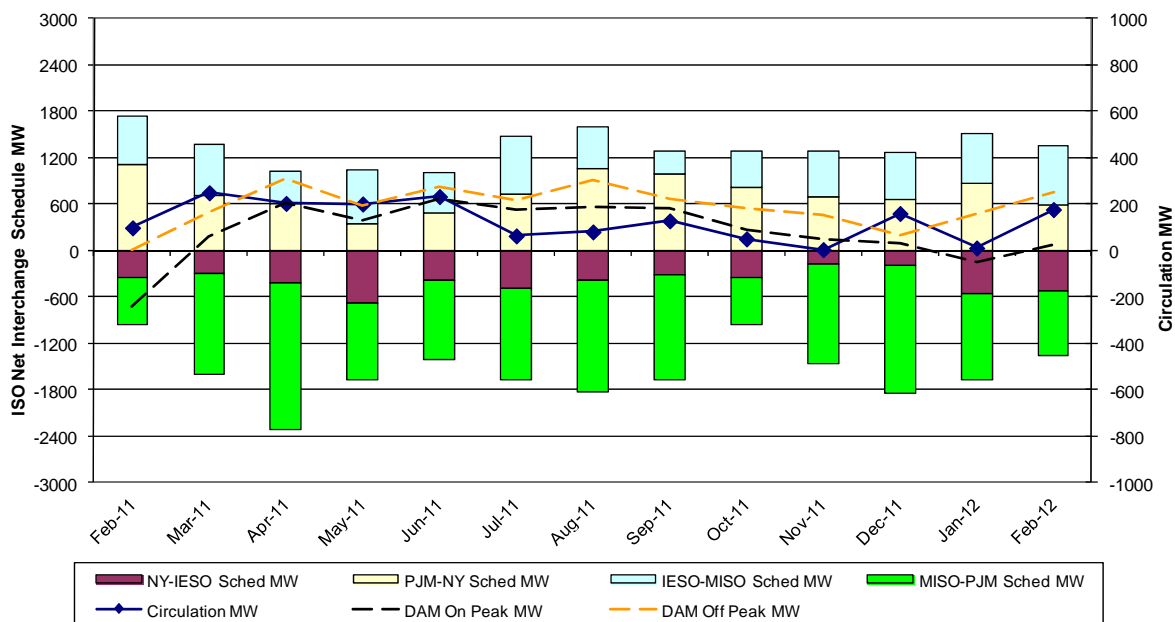
**Wind Forecast Performance
Hour Ahead Mean Absolute Percent Error
Ramp Events - Hourly Changes That Exceed 20% (279MW) of Wind Capacity (1396MW)**



MAE Forecast - Avg |actual wind generation - hour ahead forecast wind generation| / Wind Capacity
MAE Persistence - Avg |actual wind generation - hour ahead actual wind generation| / Wind Capacity

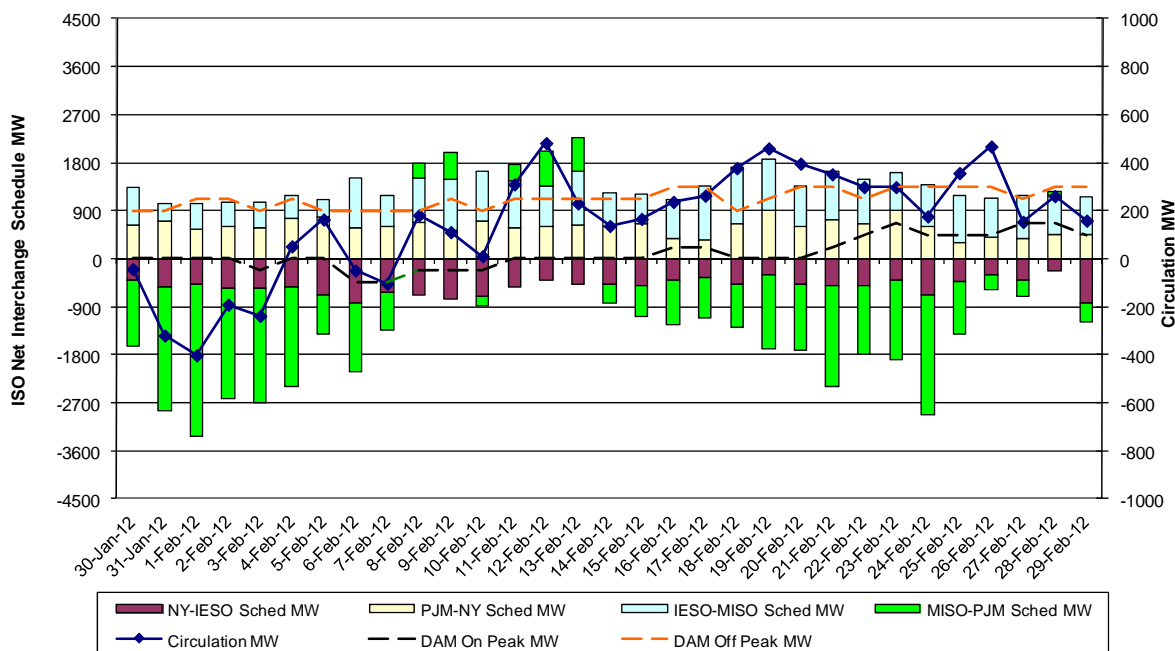


**Lake Erie Circulation and ISO Net Interchange Schedules
Monthly Averages**



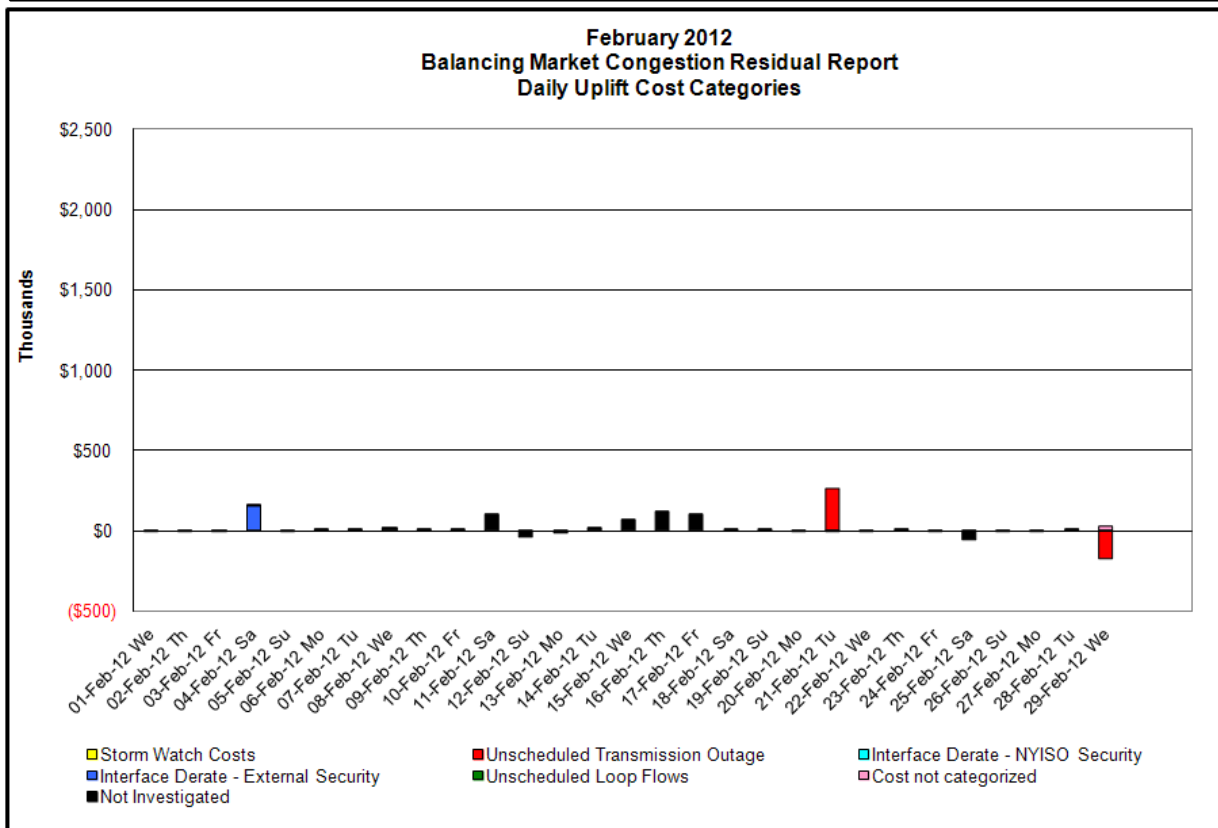
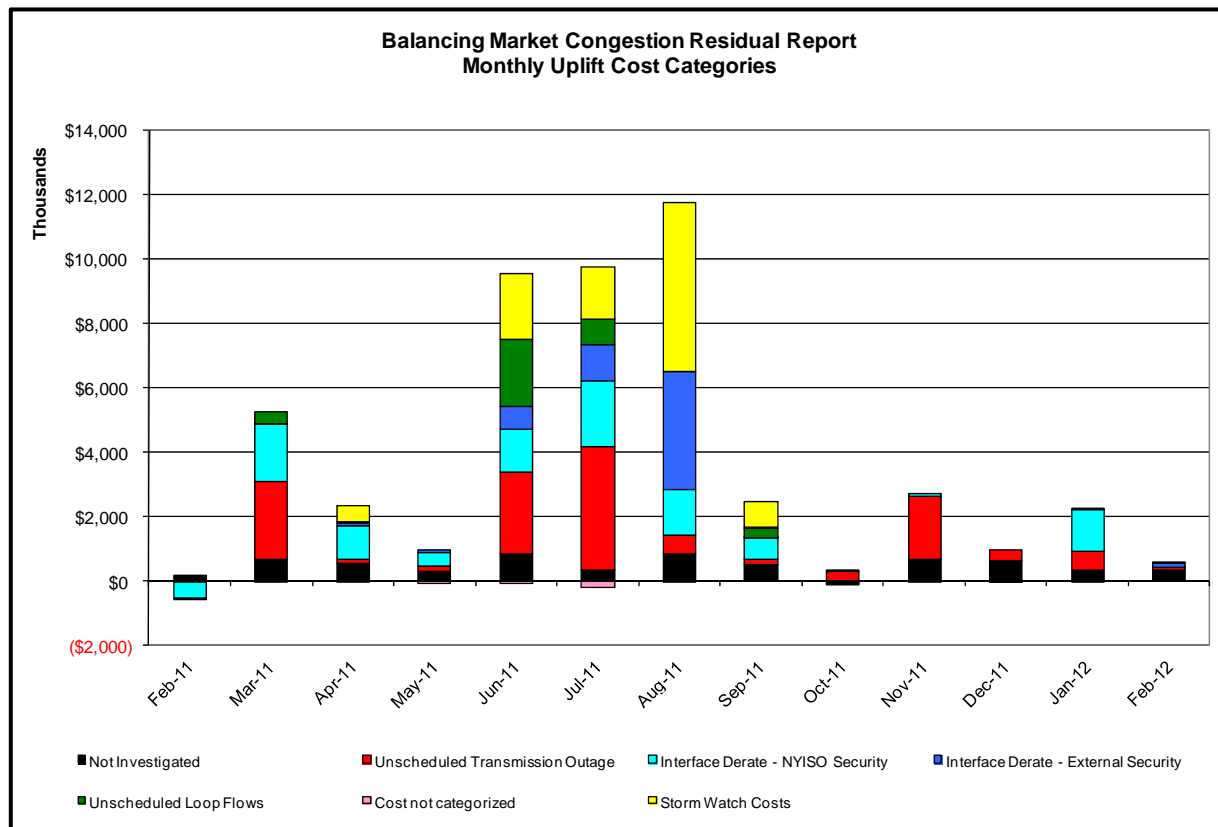
Interchange schedules with positive values aggravate clockwise Lake Erie Circulation.

**Lake Erie Circulation and ISO Net Interchange Schedules
Daily Averages**



Interchange schedules with positive values aggravate clockwise Lake Erie Circulation.

Market Performance Metrics



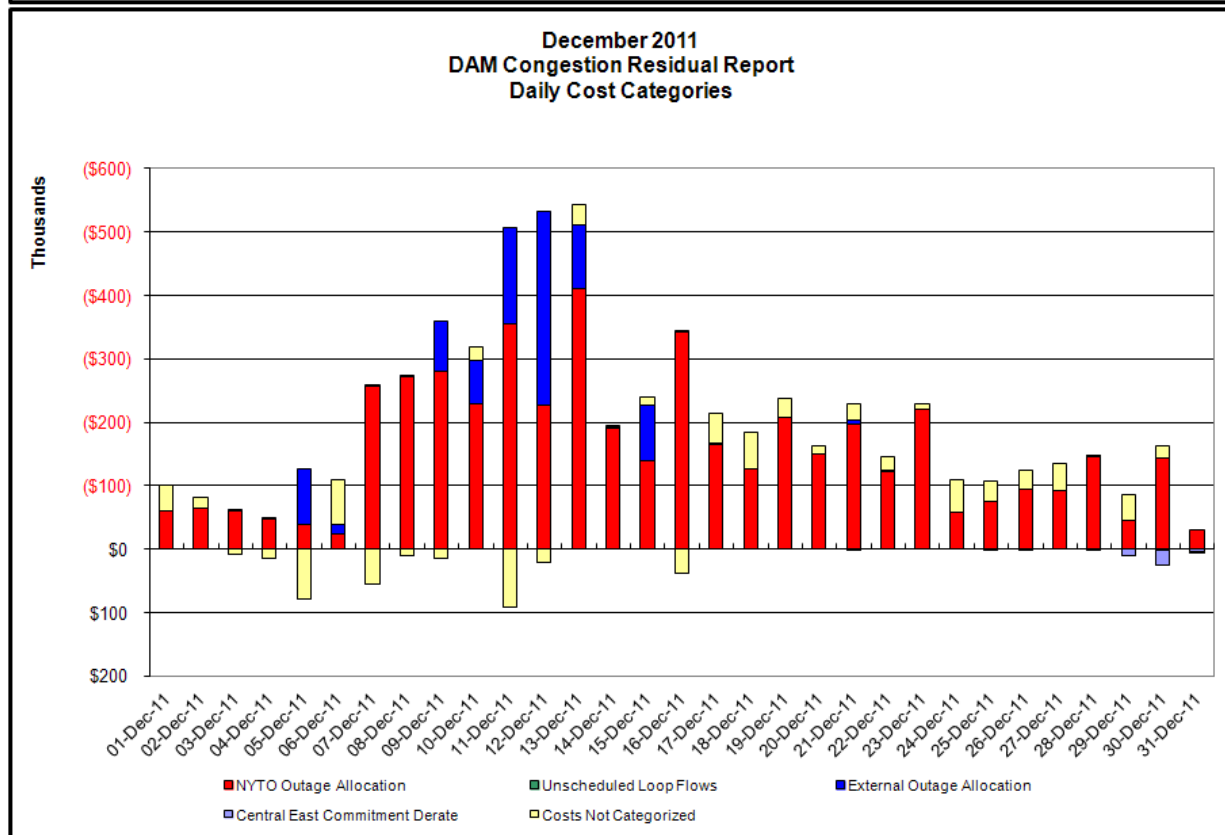
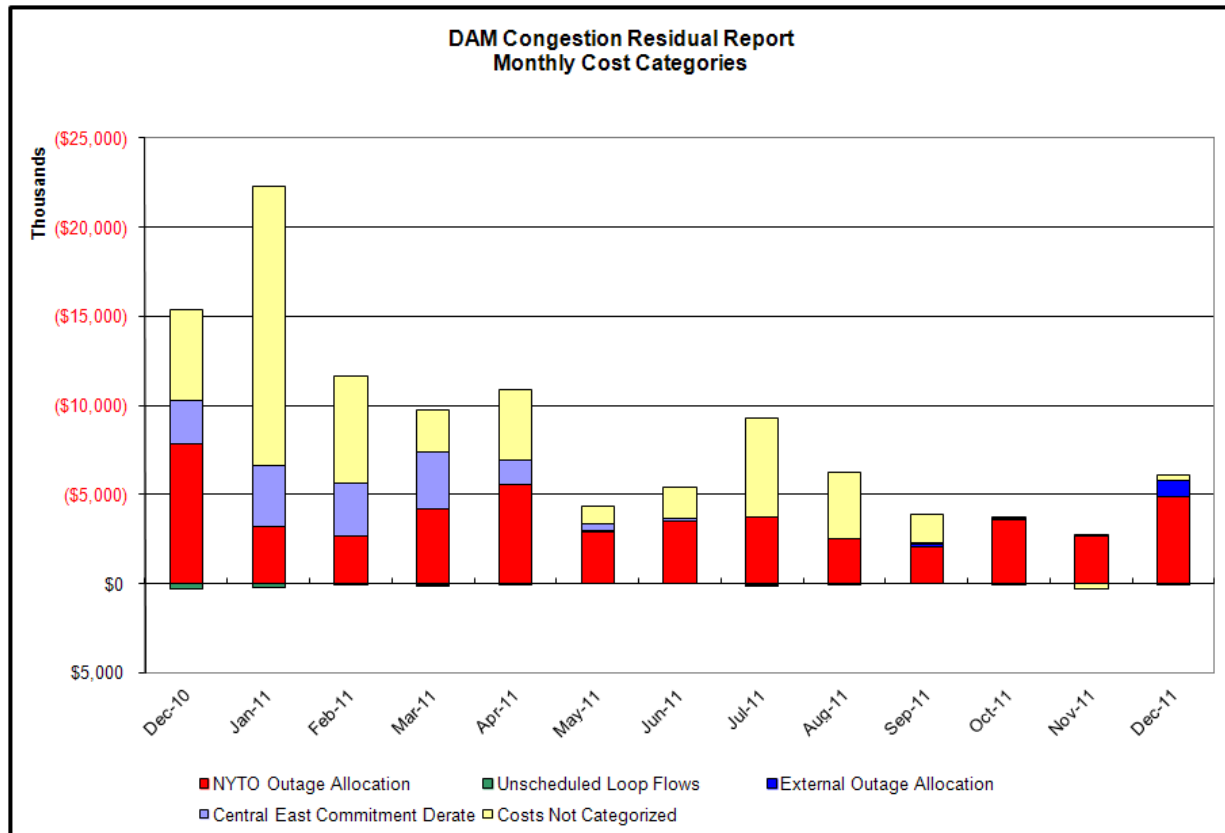
Day's investigated in February: 4,21,29			
Event	Date (yyyymmdd)	Hours	Description
	2/4/2012	23	PJM_VFT Scheduling Limit
	2/21/2012	8-13	Forced outage of FreshKills-Willow Brook 138kV (#29211)
	2/29/2012	9-22	Forced outage of PJM-Neptune

Real-Time Balancing Market Congestion Residual (Uplift Cost) Categories

<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
Storm Watch	Zone J	Thunderstorm Alert (TSA)	TSA Activations
Unscheduled Transmission Outage	Market-wide	Reduction in DAM to RTM transfers related to unscheduled transmission outage	Forced Line Outage, Unit AVR Outages
Interface Derate - NYISO Security	Market-wide	Reduction in DAM to RTM transfers not related to transmission outage	Interface Derates due to RTM voltages
Interface Derate - External Security	Market-wide	Reduction in DAM to RTM transfers related to External Control Area Security Events	TLR Events, External Transaction Curtailments
Unscheduled Loop Flows	Market-wide	Changes in DAM to RTM unscheduled loop flows impacting NYISO Interface transmission constraints	DAM to RTM Clockwise Lake Erie Loop Flows greater than 125 MW

Monthly Balancing Market Congestion Report Assumptions/Notes

- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) At a minimum those days with \$ 100 K/HR, shortfall of \$ 200 K/Day or more, or surplus of \$ 100 K/Day or more are investigated
- 3) Uplift costs associated with multiple event types are apportioned equally by hour
- 4) Investigations began with Dec 2008. Prior months are reported as Not Investigated.



Day-Ahead Market Congestion Residual Categories

<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
NYTO Outage Allocation	Responsible TO	Direct allocation to NYTO's responsible for transmission equipment status change.	DAM scheduled outage for equipment modeled in-service for the TCC Auction.
Unscheduled Loop Flows	All TO by Monthly Allocation Factor	Residual impact of Lake Erie circulation, MW difference between the DAM and TCC Auction.	Lake Erie Loop Flow Assumptions
External Outage Allocation	All TO by Monthly Allocation Factor	Direct allocation to transmission equipment status change caused by change in status of external equipment.	Tie line required out-of-service by TO of neighboring control area.
Central East Commitment Derate	All TO by Monthly Allocation Factor	Reductions in the DAM Central East_VC limit as compared to the TCC Auction limit, which are not associated with transmission line outages.	

