

Operations Performance Metrics Monthly Report



March 2014 Report

Operations & Reliability Department New York Independent System Operator

Prepared by NYISO Operations Analysis and Services, based on settlements initial settlement data collected on or before April 8, 2014.

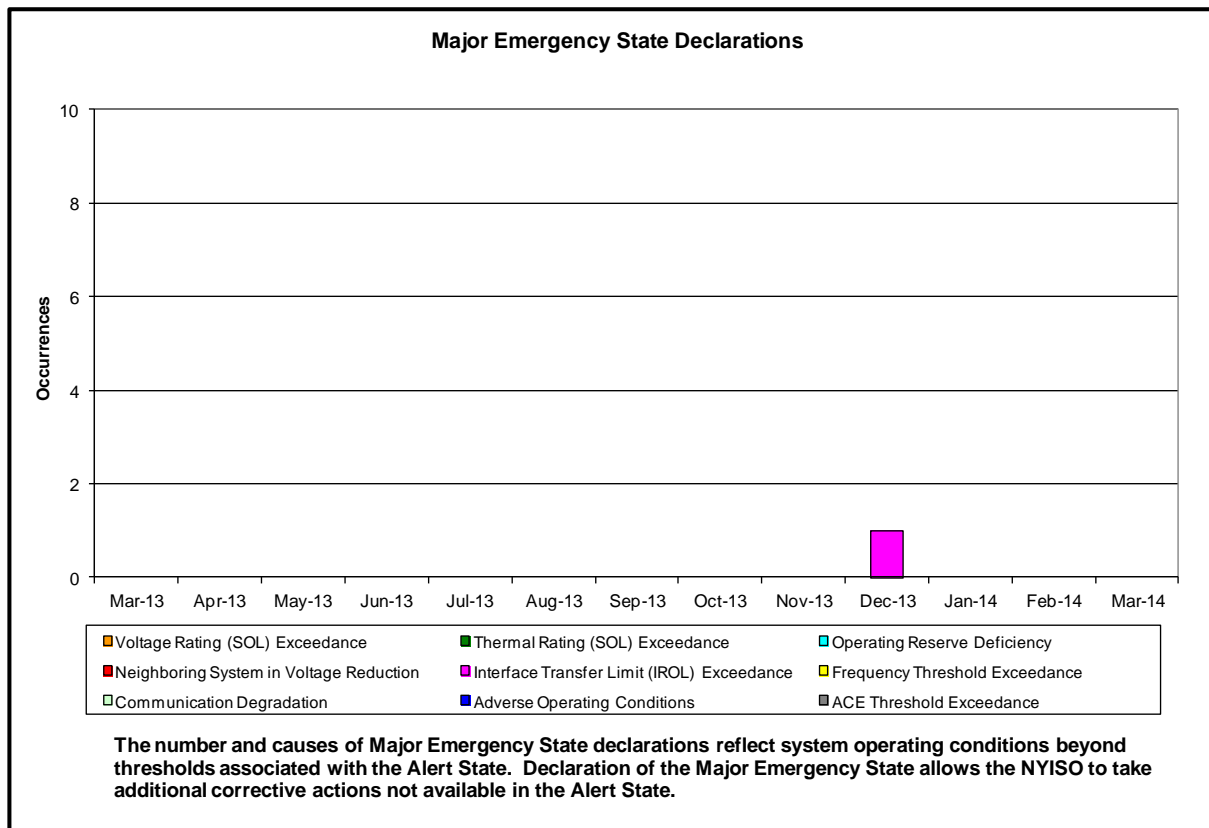
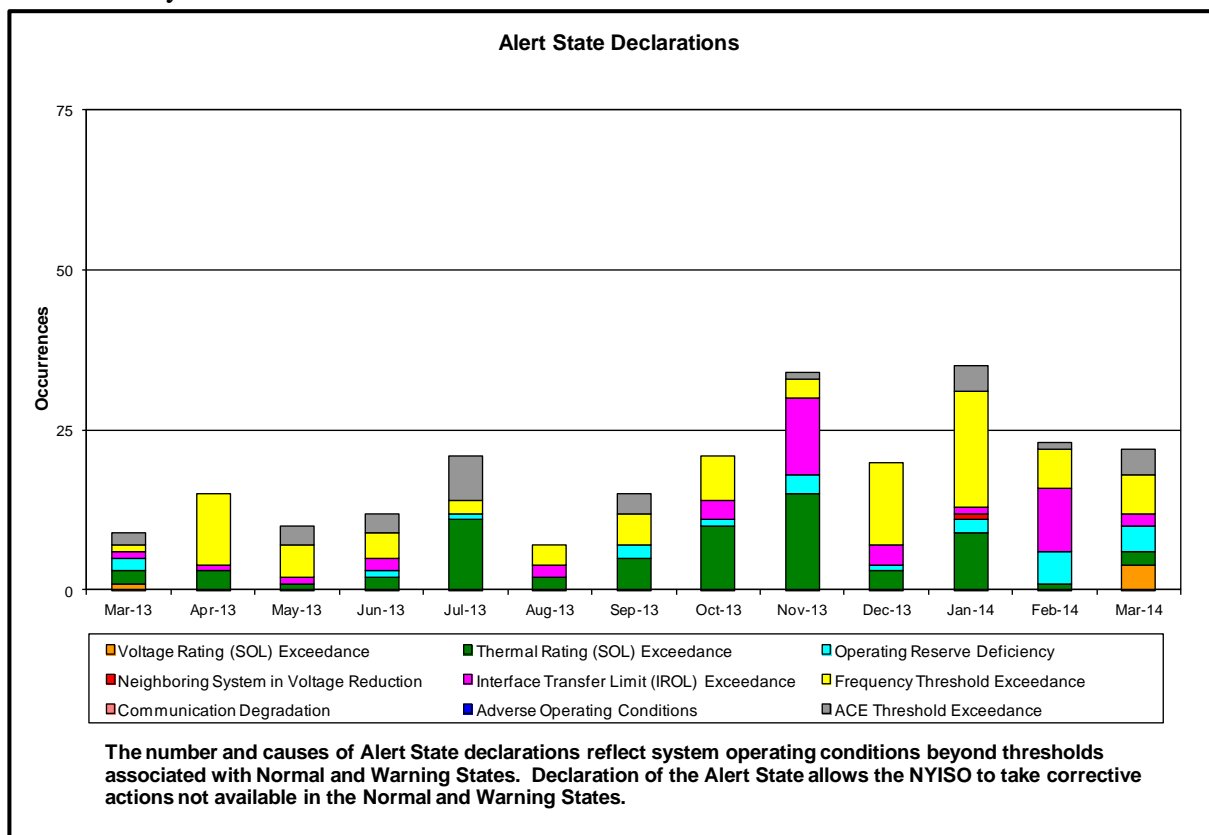
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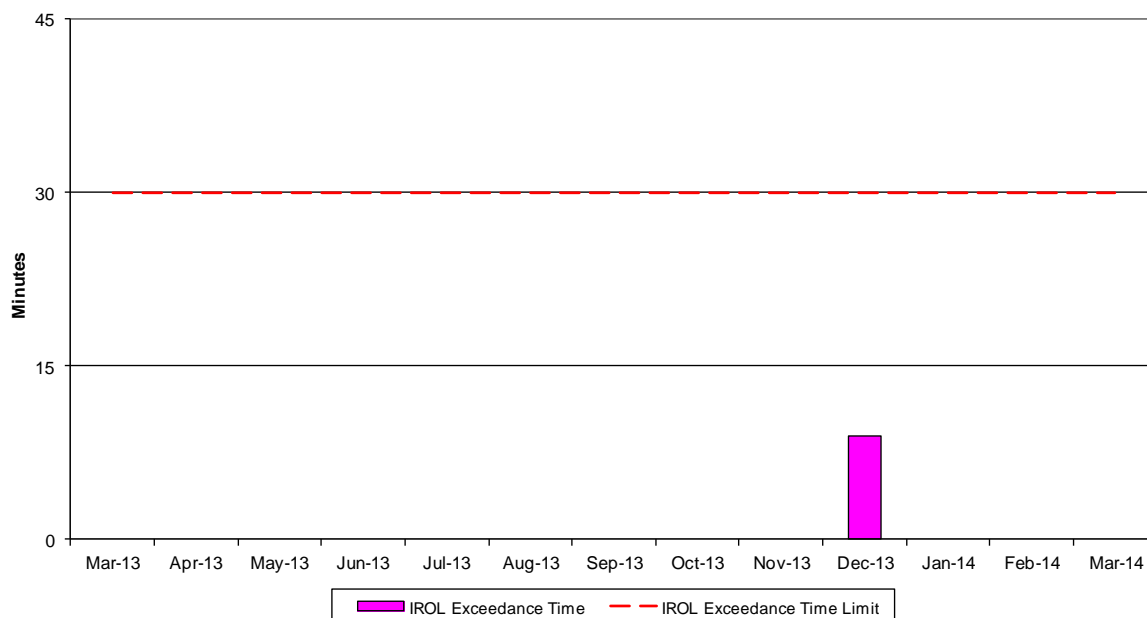
March 2014 Operations Performance Highlights

- Peak load of 23,440 MW occurred on 3/3/2014 HB 18
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- 0 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- Broader Regional Market Coordination monthly value was \$0.36M
- Broader Regional Market Coordination year-to-date value was \$5.66M
- Statewide uplift cost monthly average was \$(0.38)/MWh
- Local reliability uplift cost monthly average was \$0.64/MWh

- Reliability Performance Metrics

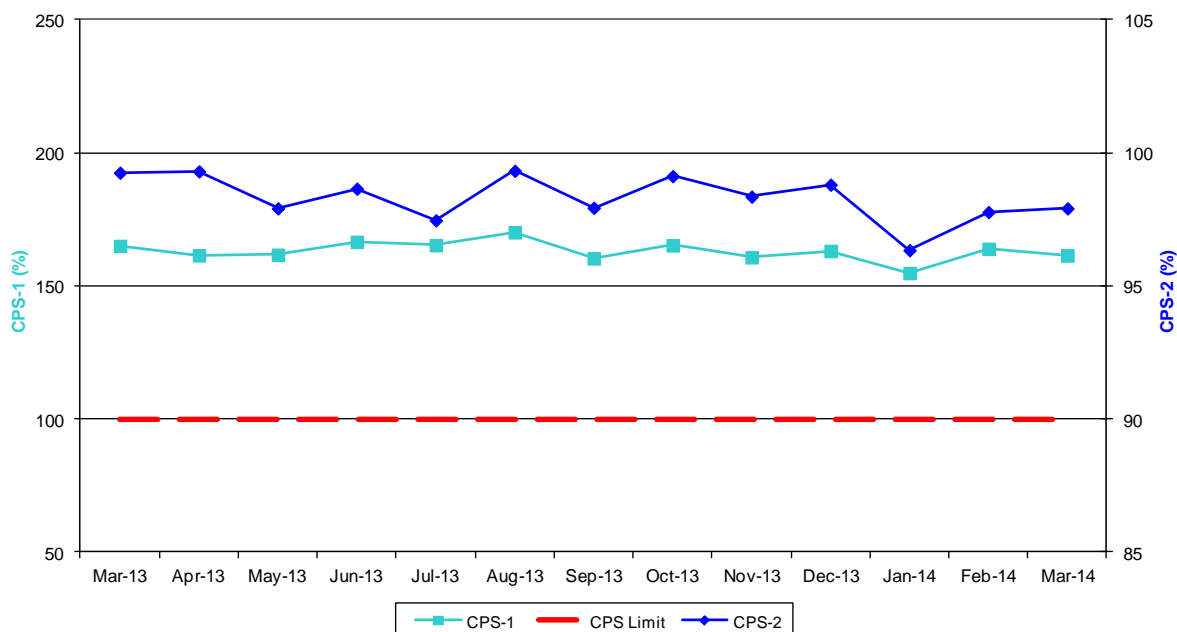


NERC IROL Time Over Limit



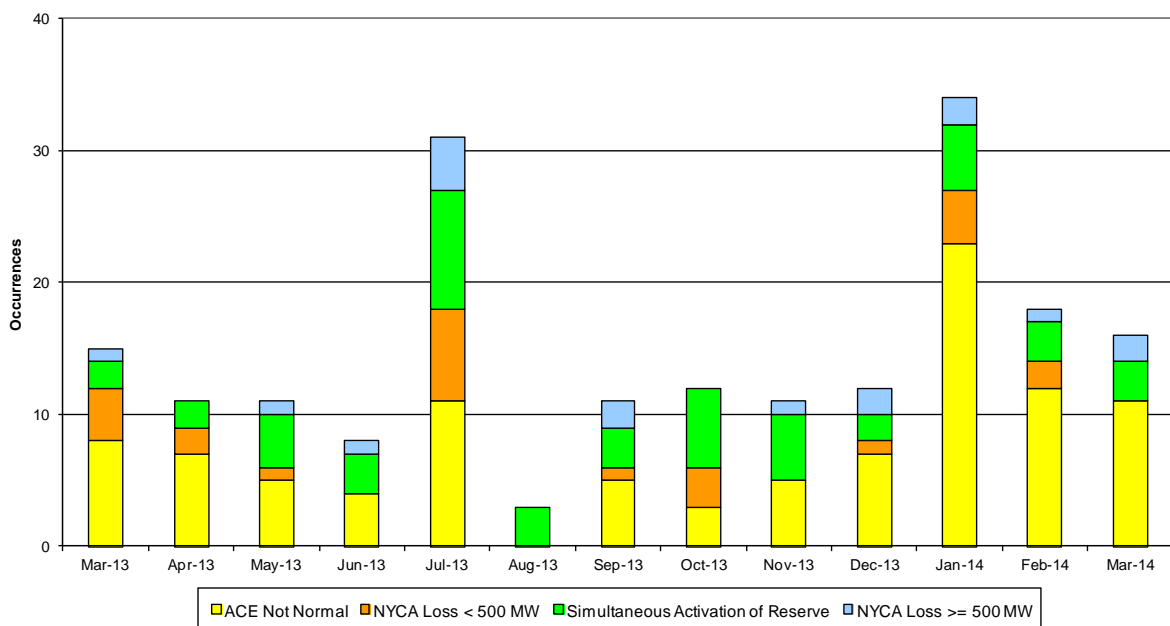
For IROL exceedances leading to Major Emergency State declarations, the maximum IROL exceedance time is identified. IROL exceedances of less than thirty minutes are considered NERC compliant.

NERC Control Performance Standards



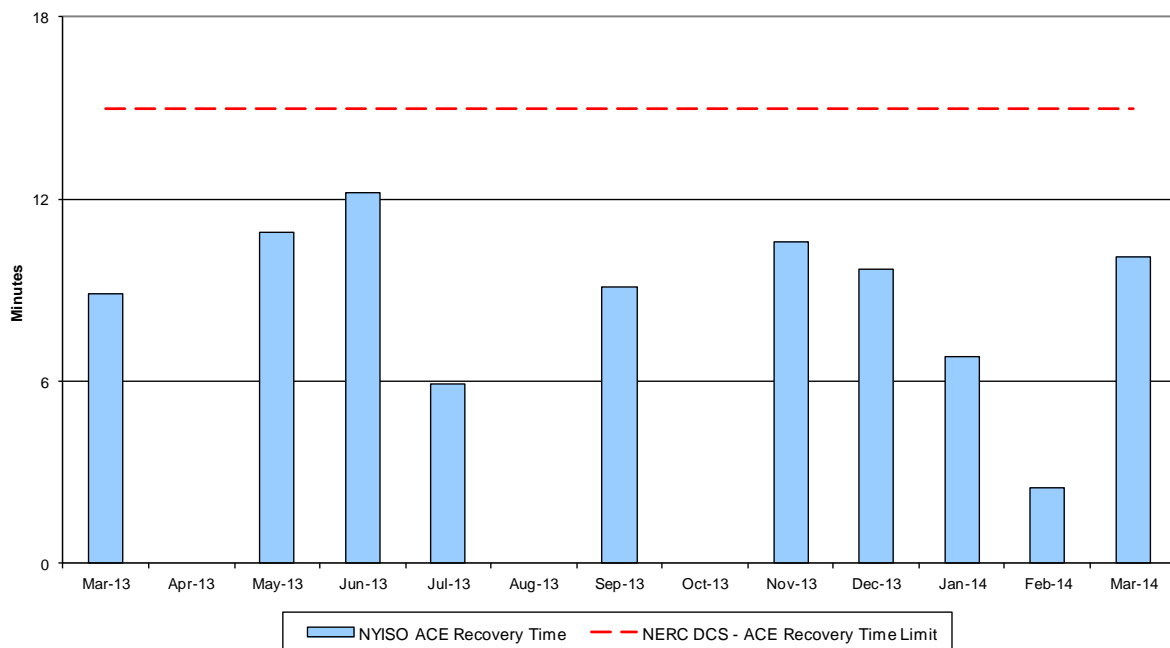
The values of NERC Control Performance Standards (CPS-1 and CPS-2) are indicators of the NYISO Area resource and demand balancing. Values exceeding the identified thresholds are NERC compliant.

Reserve Activations



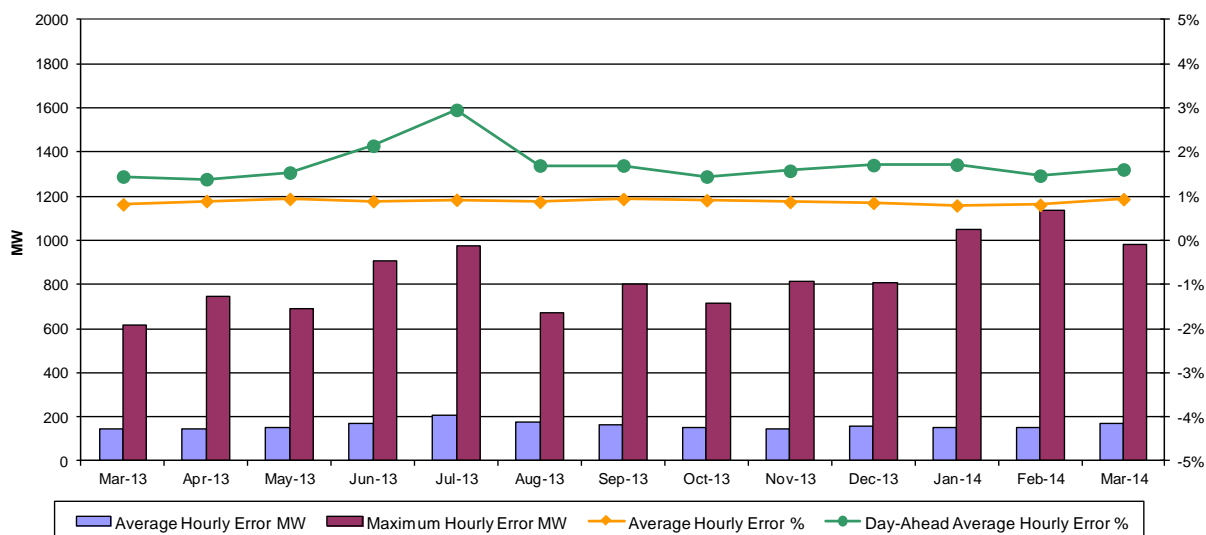
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.

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

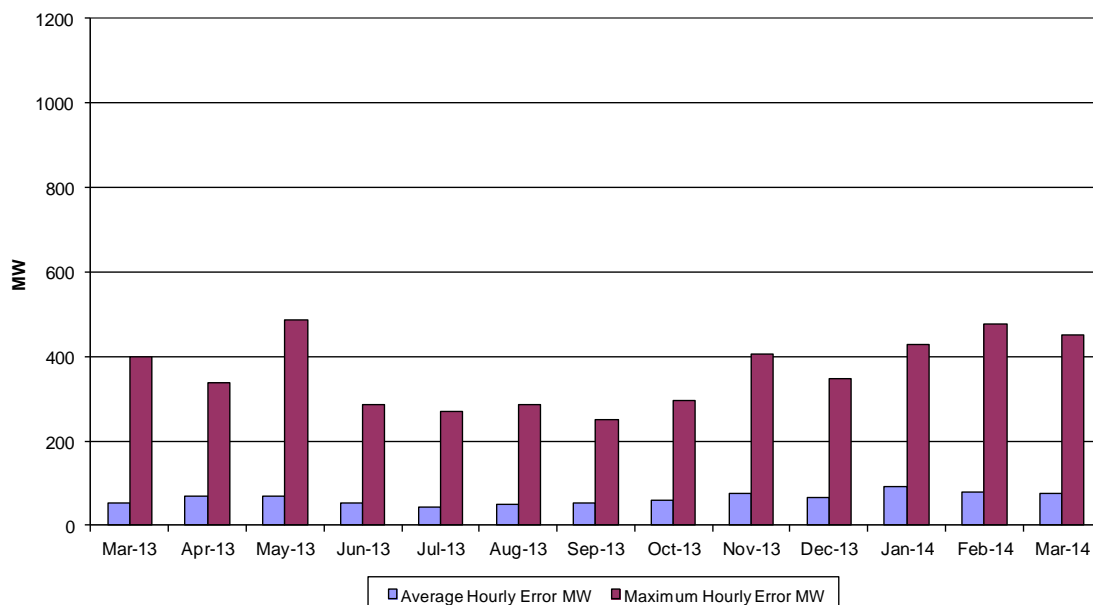


Hourly Error MW - Absolute value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.

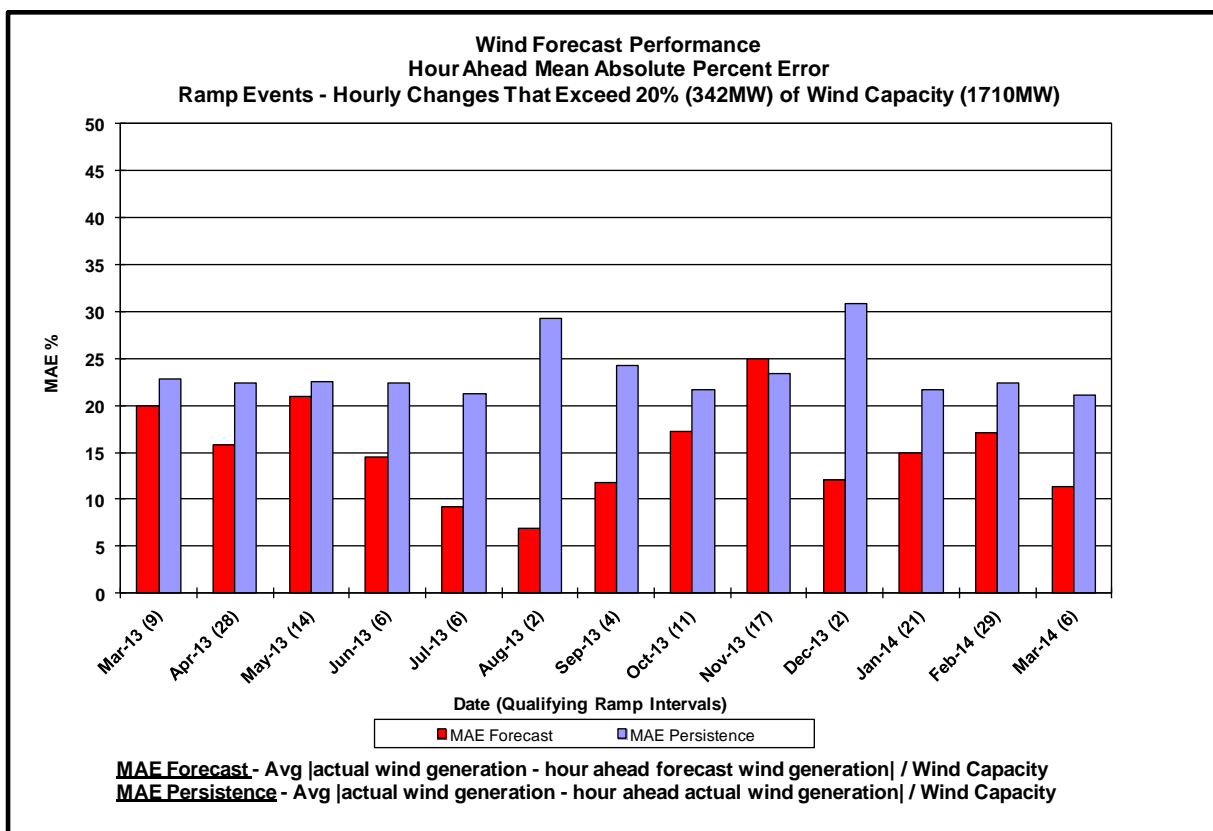
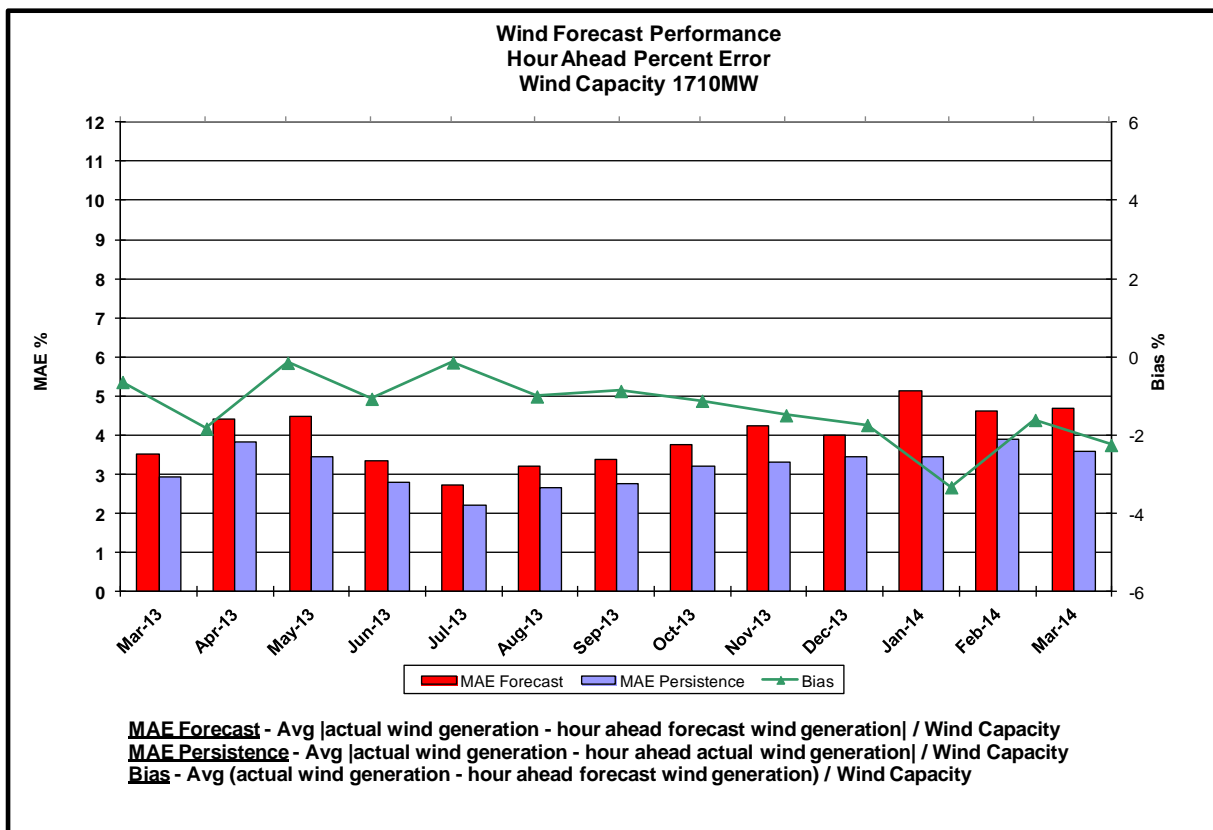
Average Hourly Error % - Average value of the ratio of hourly average error magnitude to hourly average actual load demand.

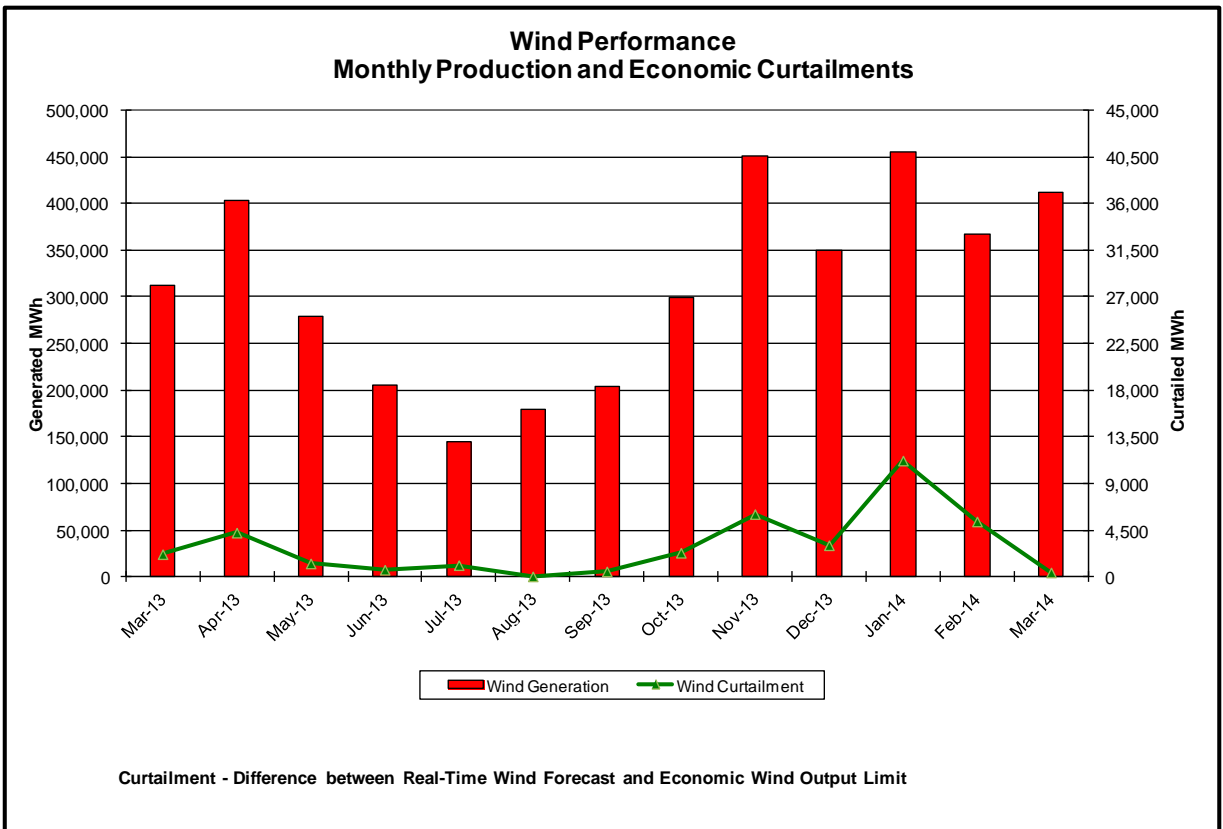
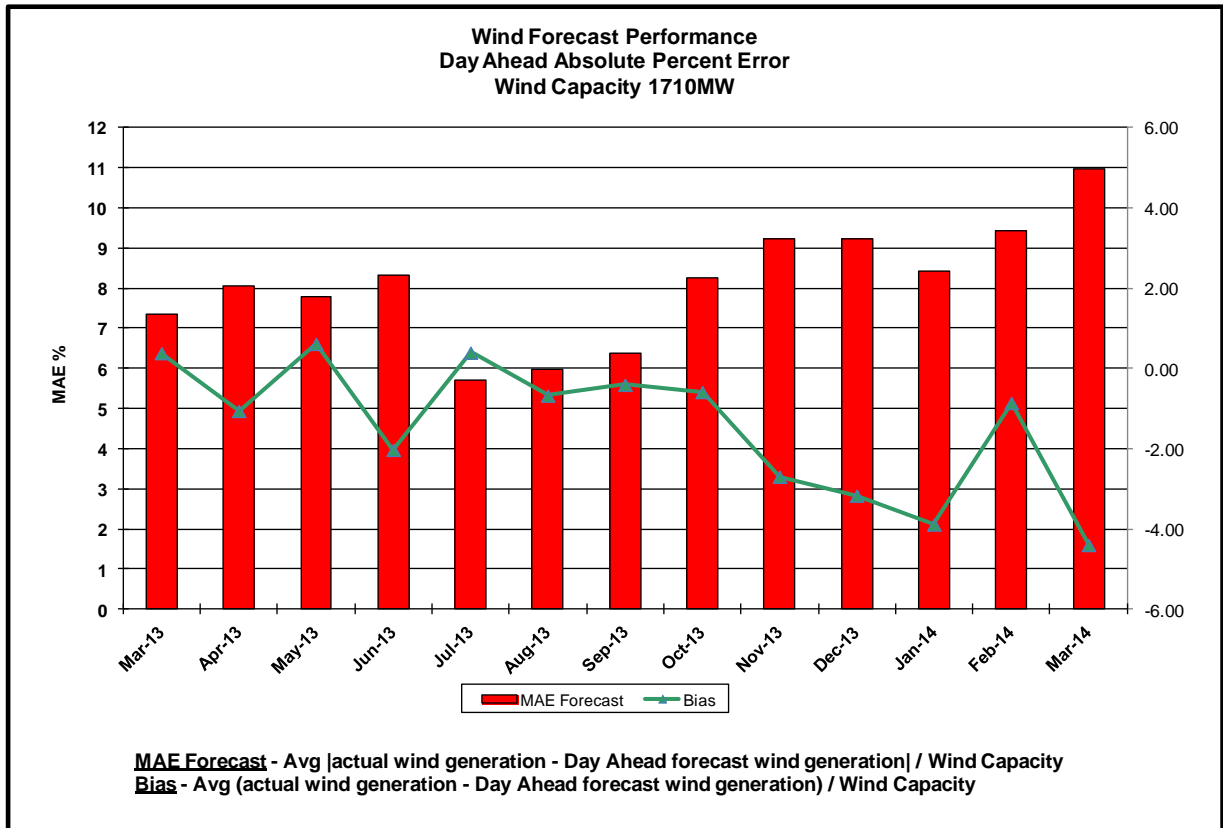
Day-Ahead Average Hourly Error % - Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.

Wind Forecast Performance Hour Ahead MW Error

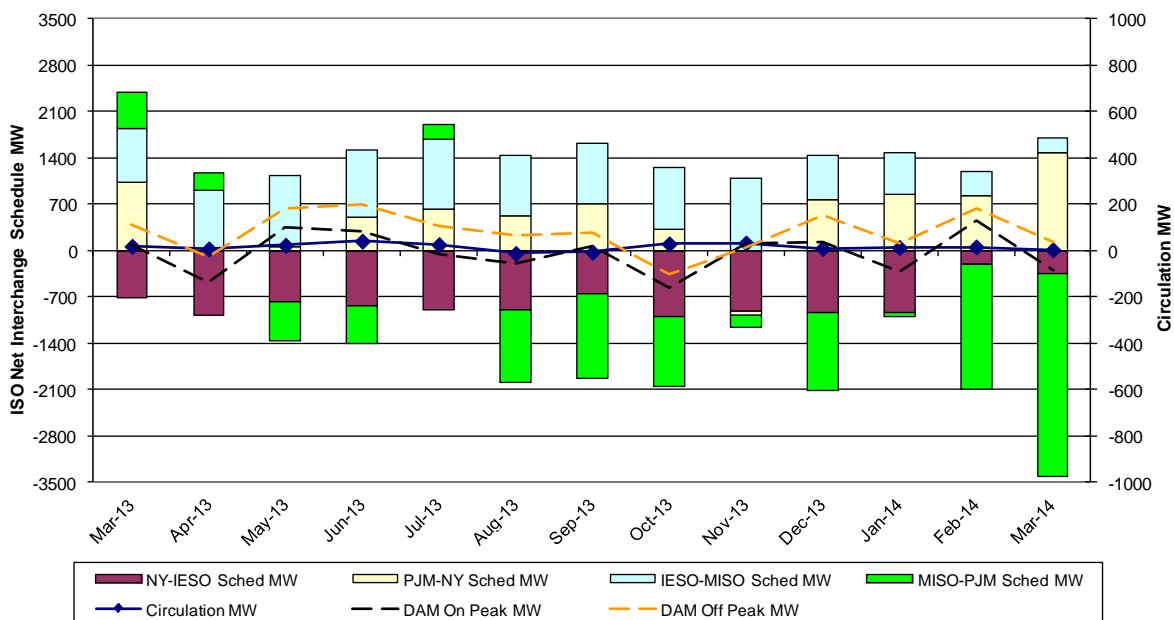


Hourly Error MW - Absolute value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.



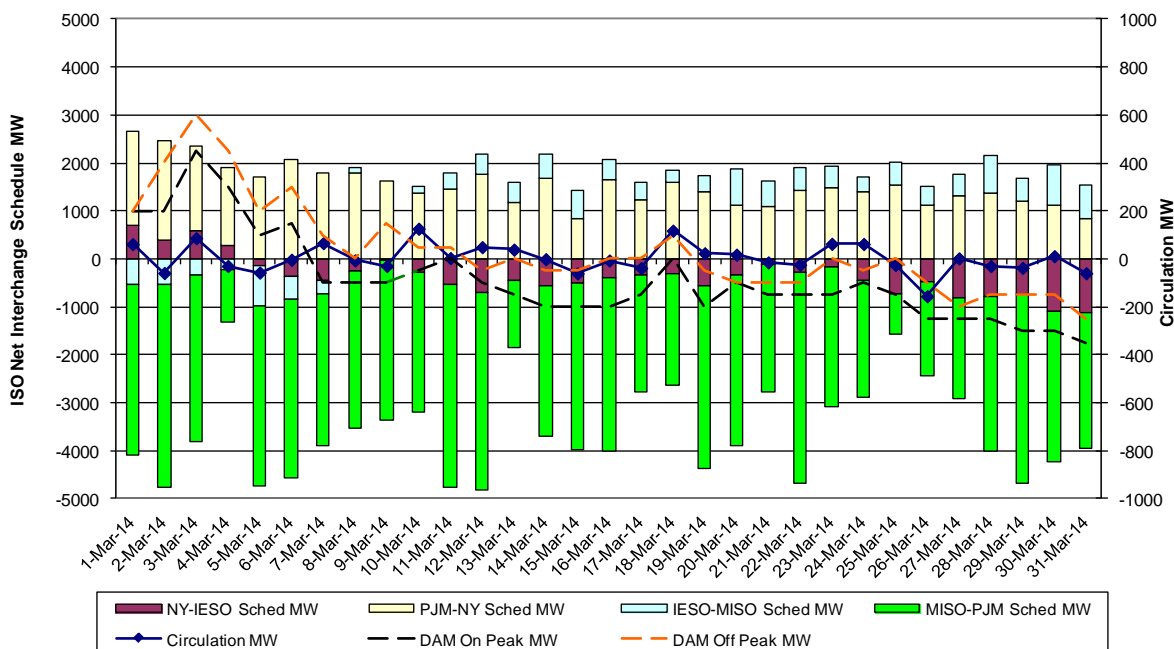


**Lake Erie Circulation and ISO Net Interchange Schedules
Monthly Averages**



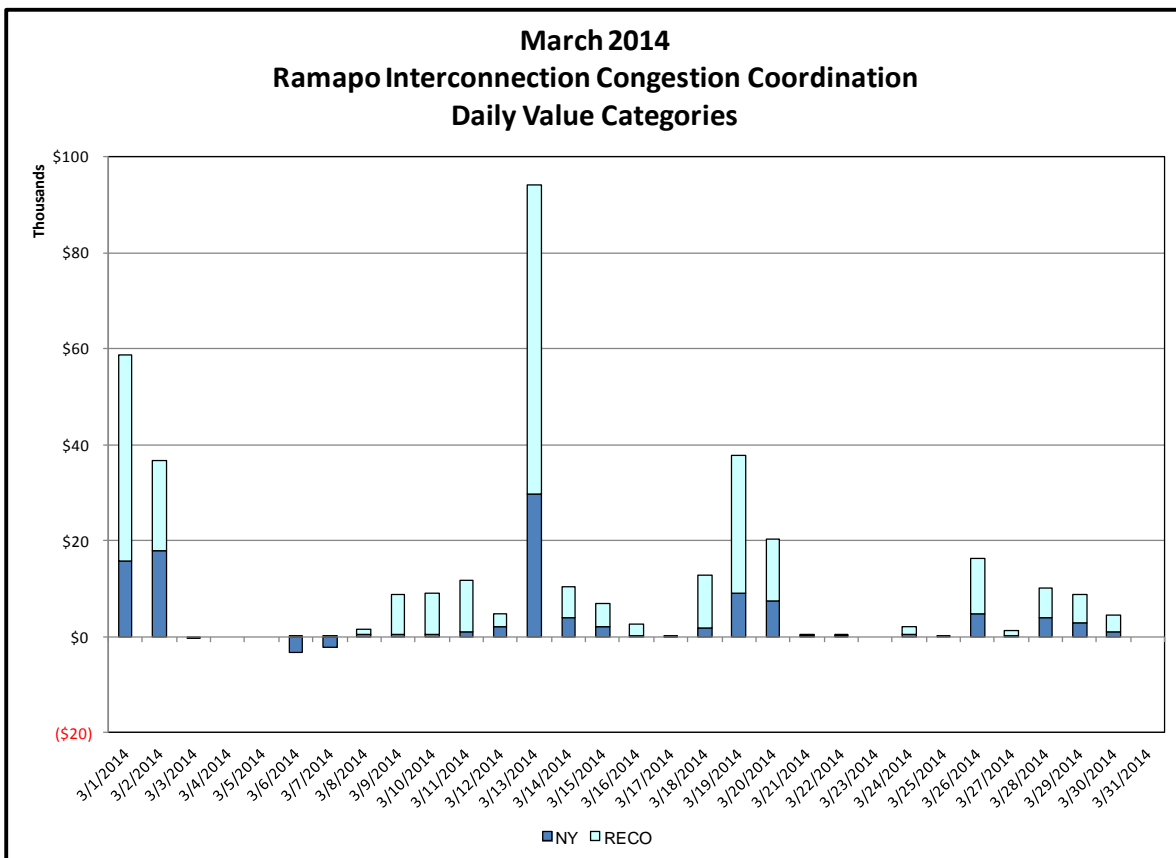
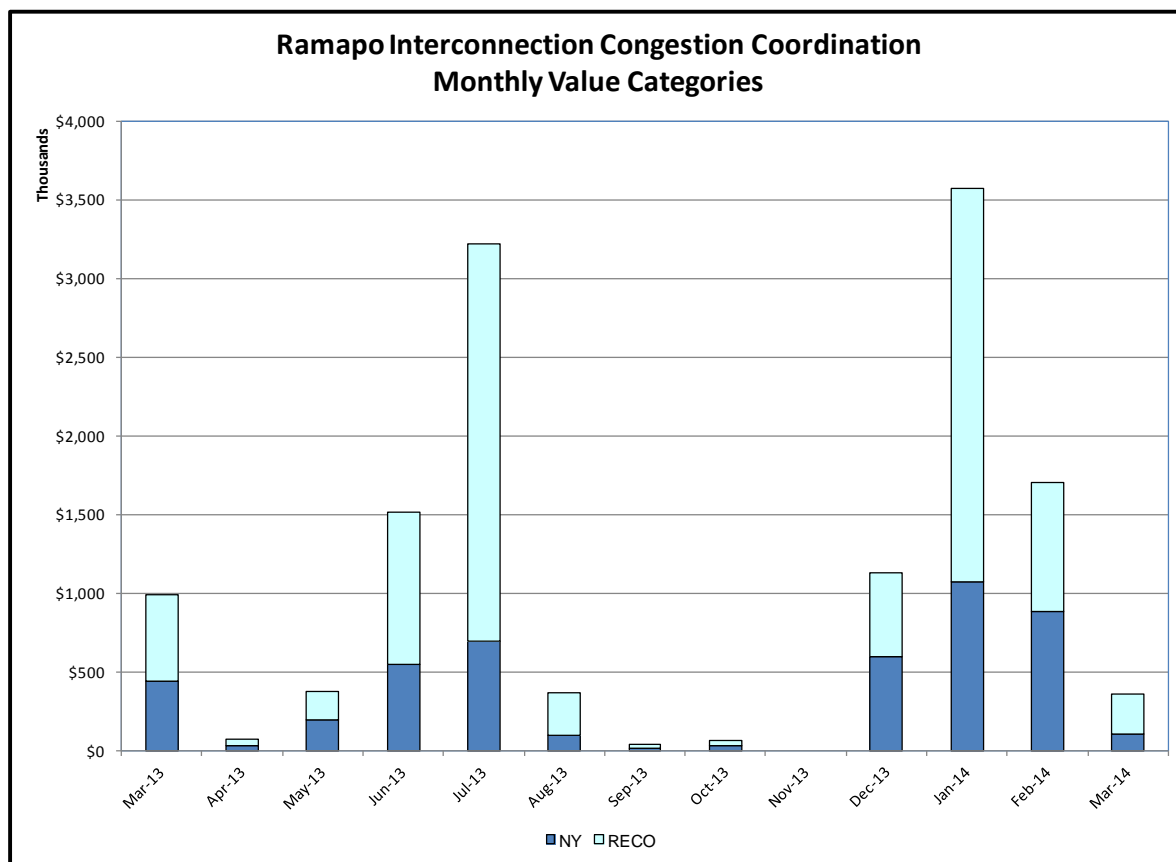
Interchange schedules with positive values aggravate clockwise Lake Erie Circulation.

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



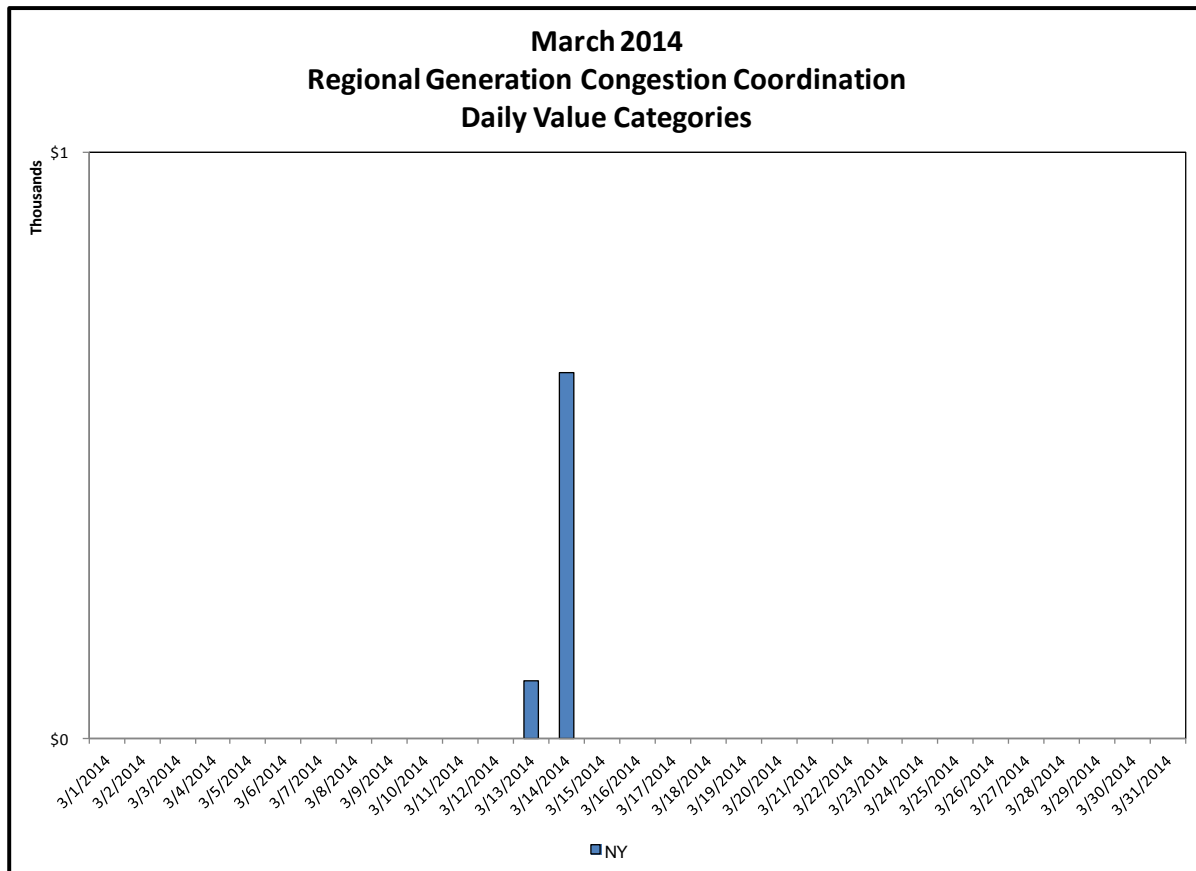
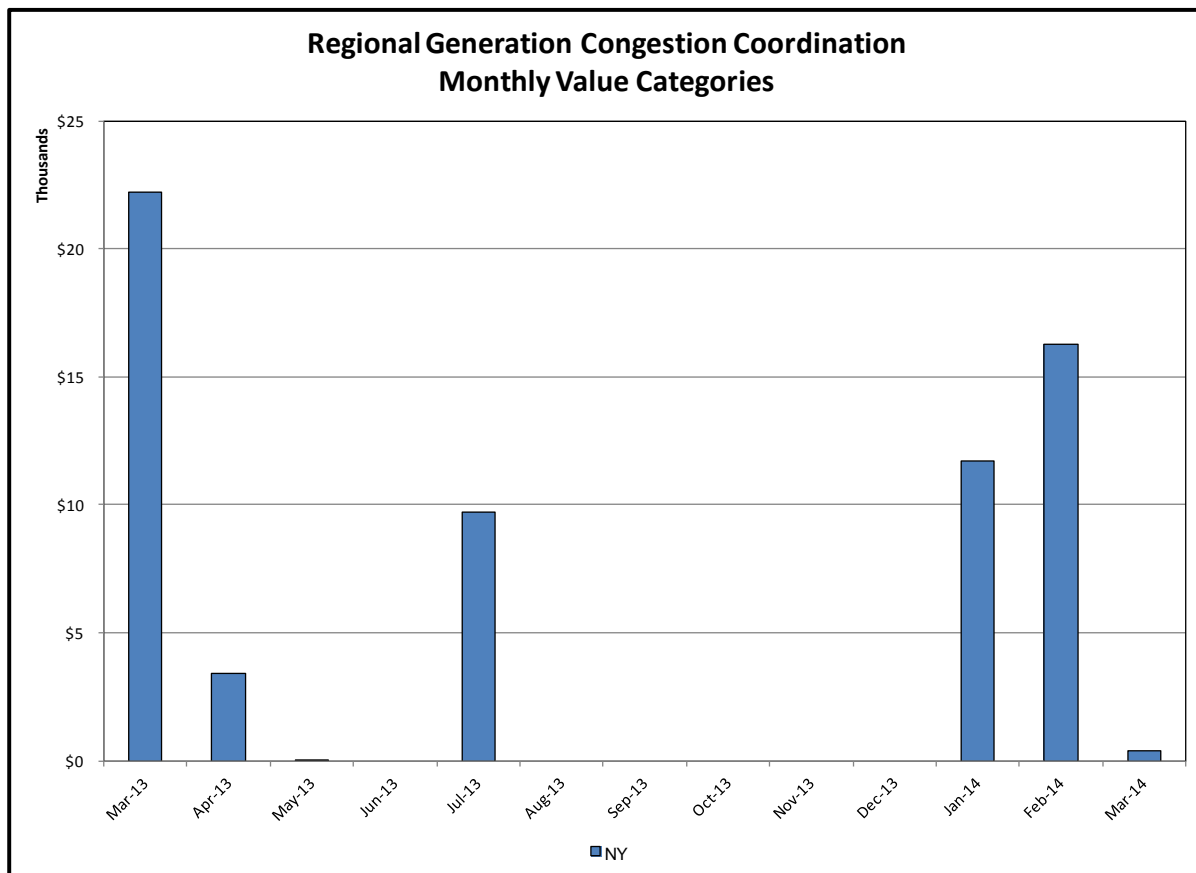
Interchange schedules with positive values aggravate clockwise Lake Erie Circulation.

Broader Regional Market Performance Metrics



Ramapo Interconnection Congestion Coordination

<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market Ramapo Coordination. When experiencing congestion, this includes (1) the estimated savings to NY for additional deliveries into NY, plus (2) PJM compensation to NY for additional deliveries into PJM (as compared to the Ramapo Target level, excluding RECO). This is net of any settlements to PJM when they are congested.
RECO	Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 5018. This includes (1) the estimated reduction in NYCA congestion due to the PJM delivery of RECO over Ramapo 5018, plus (2) PJM compensation to NY for NYCA congestion for the under-delivery or inability to deliver service to RECO load over Ramapo 5018.



Regional Generation Congestion Coordination

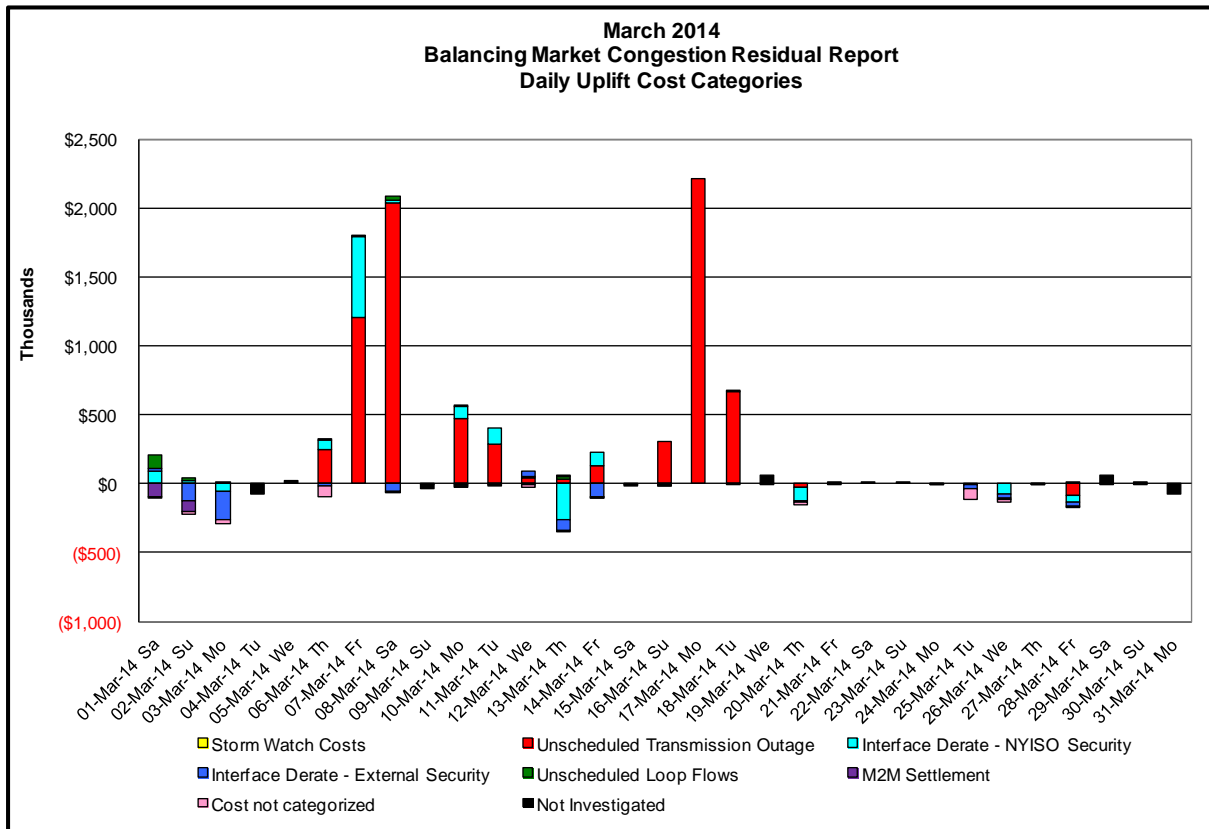
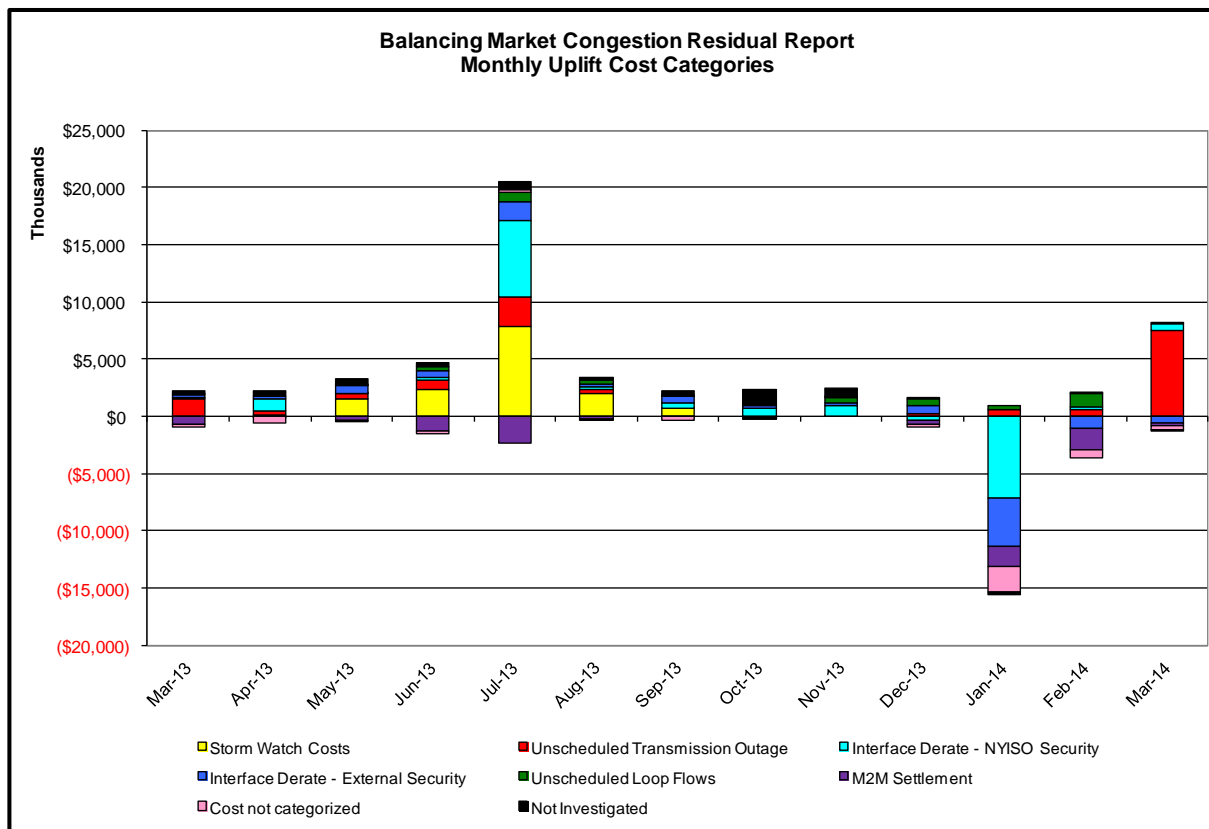
Category

NY

Description

NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization of PJM's generation resources to directly address Western or Central NY transmission congestion.

Market Performance Metrics



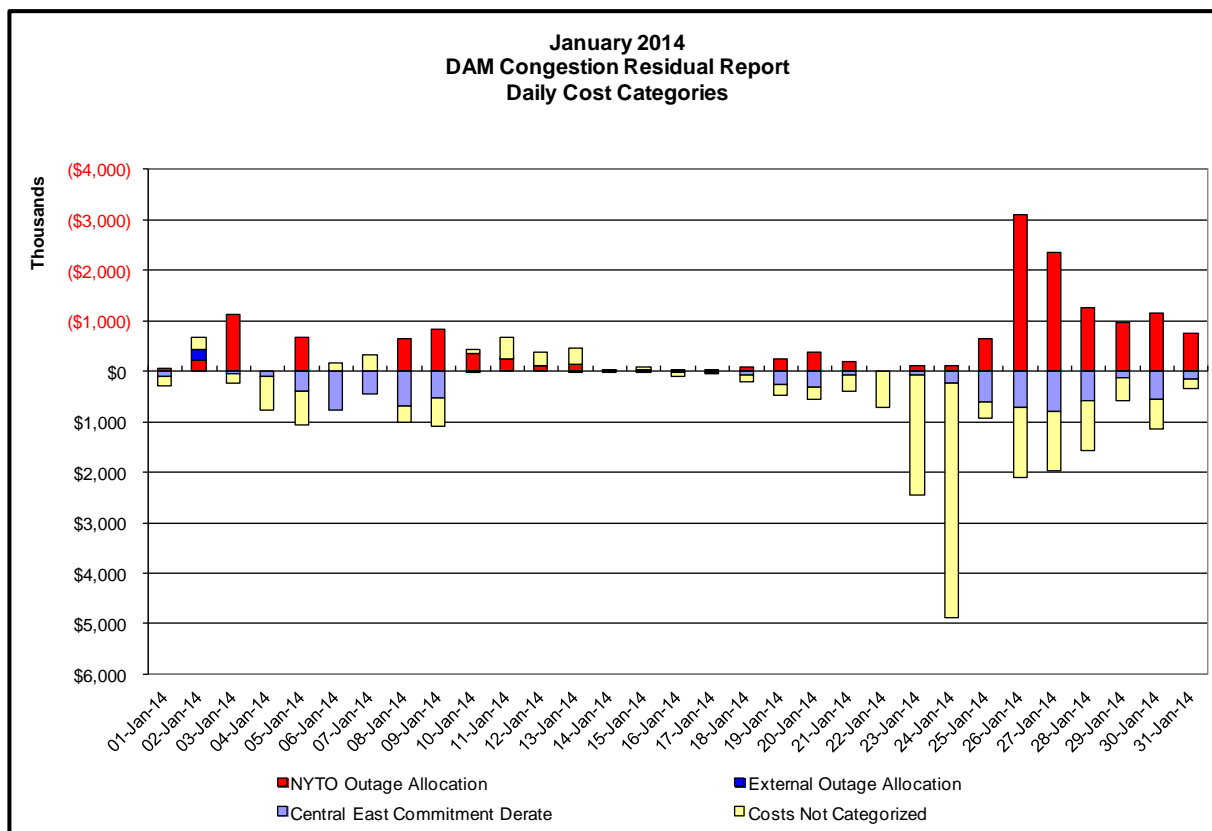
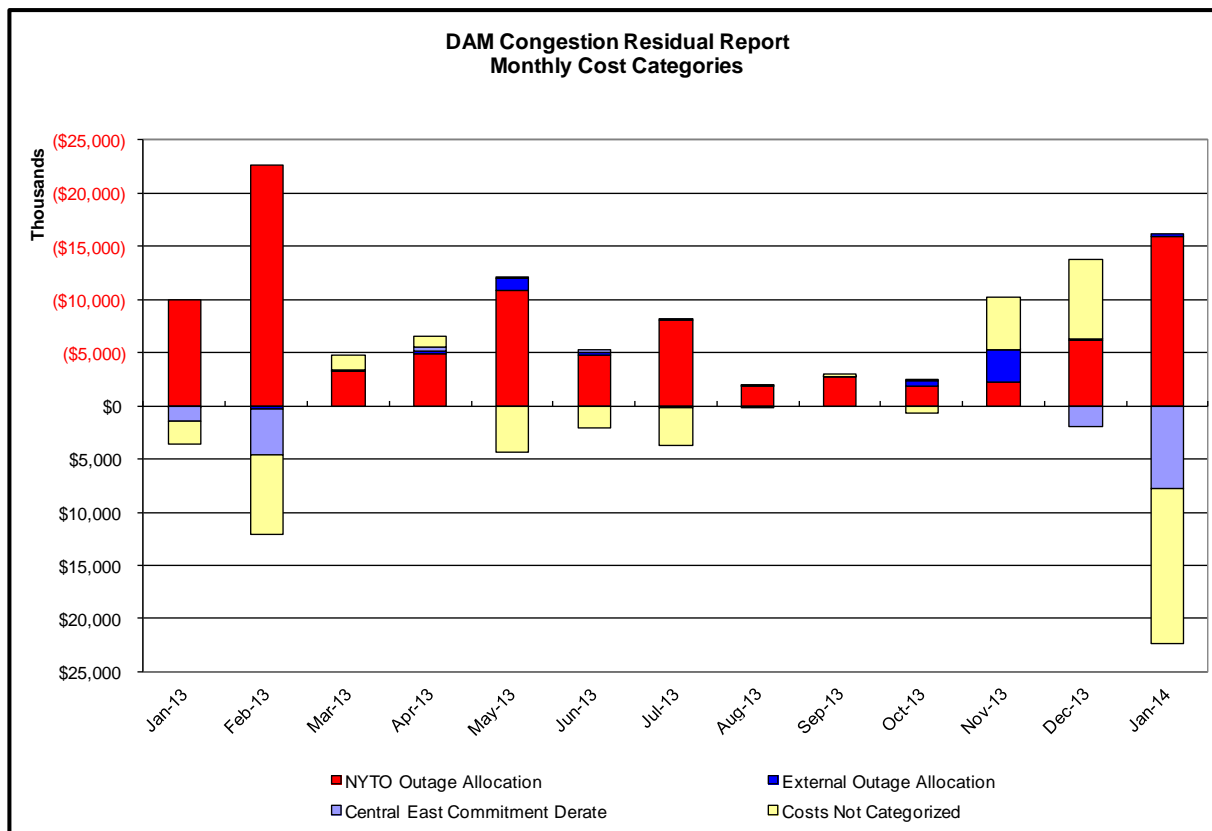
Event	Description	March Dates	
	Extended outage Berkshire-Northfield 345kV (#312)	16,17,18	
	Extended outage Hudson Ave.-Farragut 138kV (#32078)	12	
	Extended outage Moses-Willis 230kV (#MW2)	20	
	Extended outage New Scotland-Alps 345kV (#2-AN)	10,11	
	Extended outage Northfield-Ludlow 345kV (#354)	6,7,8	
	Forced outage Neptune HVDC Converter	28	
	Forced outage Willowbrook-Freshkills 138kV (#29212-2) and Willowbrook-Foxhills 138kV (#29212-1)	13,14	
	Derate Astoria East-Hellgate East 138kV (#34052)	11	
	Derate Central East	1,2,10,11	
	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2) :Y49 & M29	6,7,11,28	
	Derate Dunwoodie-Shore Road 345kV (#Y50)	1	
	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o NEPTUNE HVDC TIE	28	
	Derate East 179th Street-HellGate East 138kV (#15053,15054)	10,11,12,13	
	Derate Farragut-Hudson Ave. 138kV (#32079)	2,10,11	
	Derate Foxhills-Greenwood 138kV (#29231)	13	
	Derate Foxhills-Greenwood 138kV (#29231) for I/o SCB:GOETH(7):26&R26&A2253&BK1	13	
	Derate Foxhills-Greenwood 138kV (#29231) for I/o SCB:GOWANUS(16):42&26	13	
	Derate Freeport-Newbridge 138kV (#461)	28	
	Derate Motthaven-Dunwoodie 345kV (#71) for I/o SPRNBRK-W49TH_ST kV (#M51)	14	
	NYCA DNI Ramp Limit	2,3,6,7,8,10,12,13,14,20,25,26,28	
	Uprate Central East	8,13,14,20,26,28	
	Uprate Dunwoodie-Shore Road 345kV (#Y50)	13	
	Uprate Motthaven-Dunwoodie 345kV (#71)	13	
	Uprate Motthaven-Dunwoodie 345kV (#71) for I/o SPRNBRK-W49TH_ST kV (#M51)	13,14	
		HQ_CEDARS-NY Scheduling Limit	3
		HQ_CHAT DNI Ramp Limit	3,12,25
HQ_CHAT-NY Scheduling Limit		6,25	
IESO_AC DNI Ramp Limit		1,2,3,8,13,14	
NE_AC - NY Scheduling Limit		14,26	
NE_AC DNI Limit		6	
NE_AC DNI Ramp Limit		13,28	
NE_AC-NY Scheduling Limit		2,3	
NE_NNC1385-NY Scheduling Limit		6,8,10,13,16	
PJM_AC DNI Ramp Limit		1,3,13,28	
PJM_AC-NY Scheduling Limit		1,2,3,6	
		Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East	1,2,8,10
	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Pleasant Valley-Leeds	13	

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

Category	Cost Assignment	Events Types	Event Examples
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
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	

Monthly Balancing Market Congestion Report Assumptions/Notes

- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour



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.
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.	

