

Operations Performance Metrics Monthly Report



February 2016 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, 2016.

Table of Contents

- ◆ **Highlights**
 - *Operations Performance*

- ◆ **Reliability Performance Metrics**
 - *Alert State Declarations*
 - *Major Emergency State Declarations*
 - *IROL Exceedance Times*
 - *Balancing Area Control Performance*
 - *Reserve Activations*
 - *Disturbance Recovery Times*
 - *Load Forecasting Performance*
 - *Wind Forecasting Performance*
 - *Wind Curtailment Performance*
 - *Lake Erie Circulation and ISO Schedules*

- ◆ **Broader Regional Market Performance Metrics**
 - *Ramapo Interconnection Congestion Coordination Monthly Value*
 - *Ramapo Interconnection Congestion Coordination Daily Value*
 - *Regional Generation Congestion Coordination Monthly Value*
 - *Regional Generation Congestion Coordination Daily Value*
 - *Regional RT Scheduling - PJM Monthly Value*
 - *Regional RT Scheduling - PJM Daily Value*

- ◆ **Market Performance Metrics**
 - *Monthly Statewide Uplift Components and Rate*
 - *RTM Congestion Residuals Monthly Trend*
 - *RTM Congestion Residuals Daily Costs*
 - *RTM Congestion Residuals Event Summary*
 - *RTM Congestion Residuals Cost Categories*
 - *DAM Congestion Residuals Monthly Trend*
 - *DAM Congestion Residuals Daily Costs*
 - *DAM Congestion Residuals Cost Categories*
 - *NYCA Unit Uplift Components Monthly Trend*
 - *NYCA Unit Uplift Components Daily Costs*
 - *Local Reliability Costs Monthly Trend & Commitment Hours*
 - *TCC Monthly Clearing Price with DAM Congestion*
 - *ICAP Spot Market Clearing Price*
 - *UCAP Awards*

February 2016 Operations Performance Highlights

- Peak load of 23,301 MW occurred on 02/11/2016 HB 18
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- 4 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- Two Major Emergencies were declared on 2/3/2016, in HB10 and HB15, both for trips of the Gilboa-Fraser 345kV (#GF5-35) circuit causing the Central East interface flow to exceed its voltage collapse limit.
- A Major Emergency was declared on 2/15/2016 in HB06 for a trip of the Marcy-New Scotland 345kV (#18) causing the Central East interface flow to exceed its voltage collapse limit.
- The Graduated Transmission Demand Curve was implemented on 2/11/2016.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

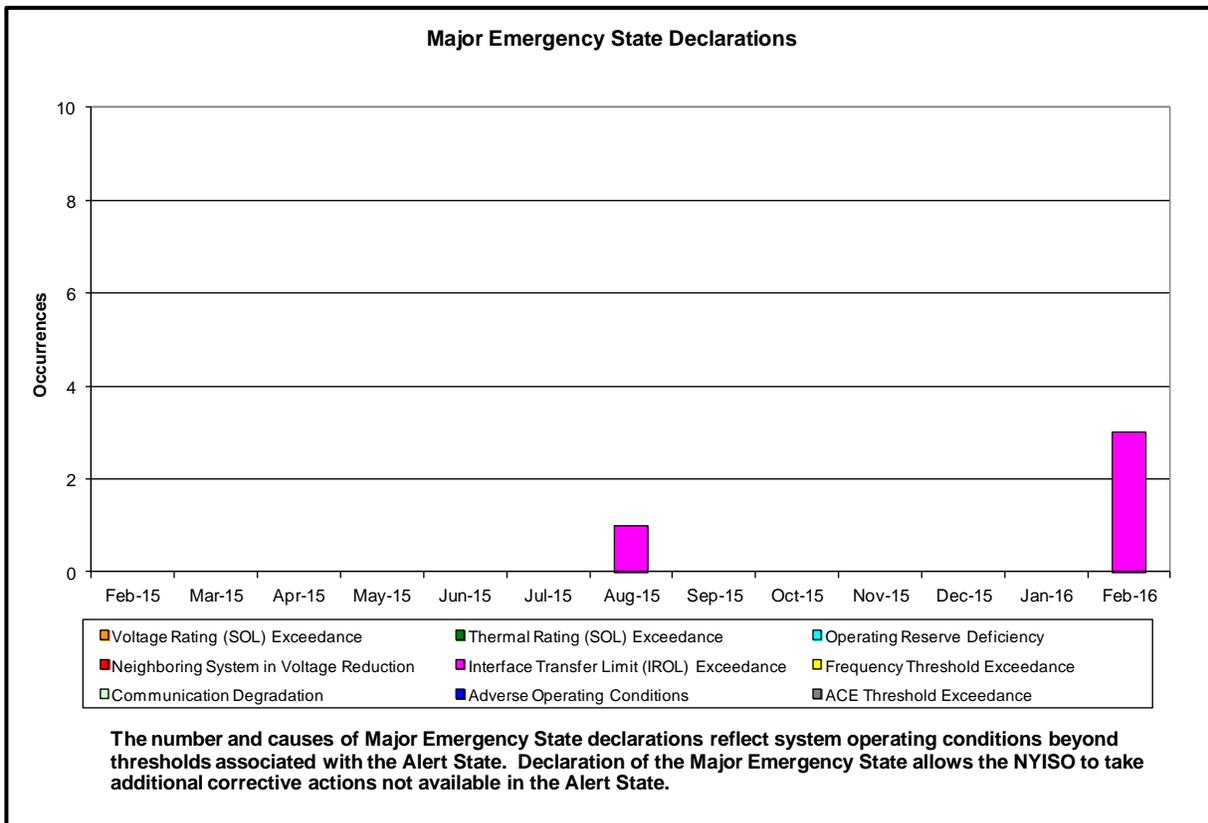
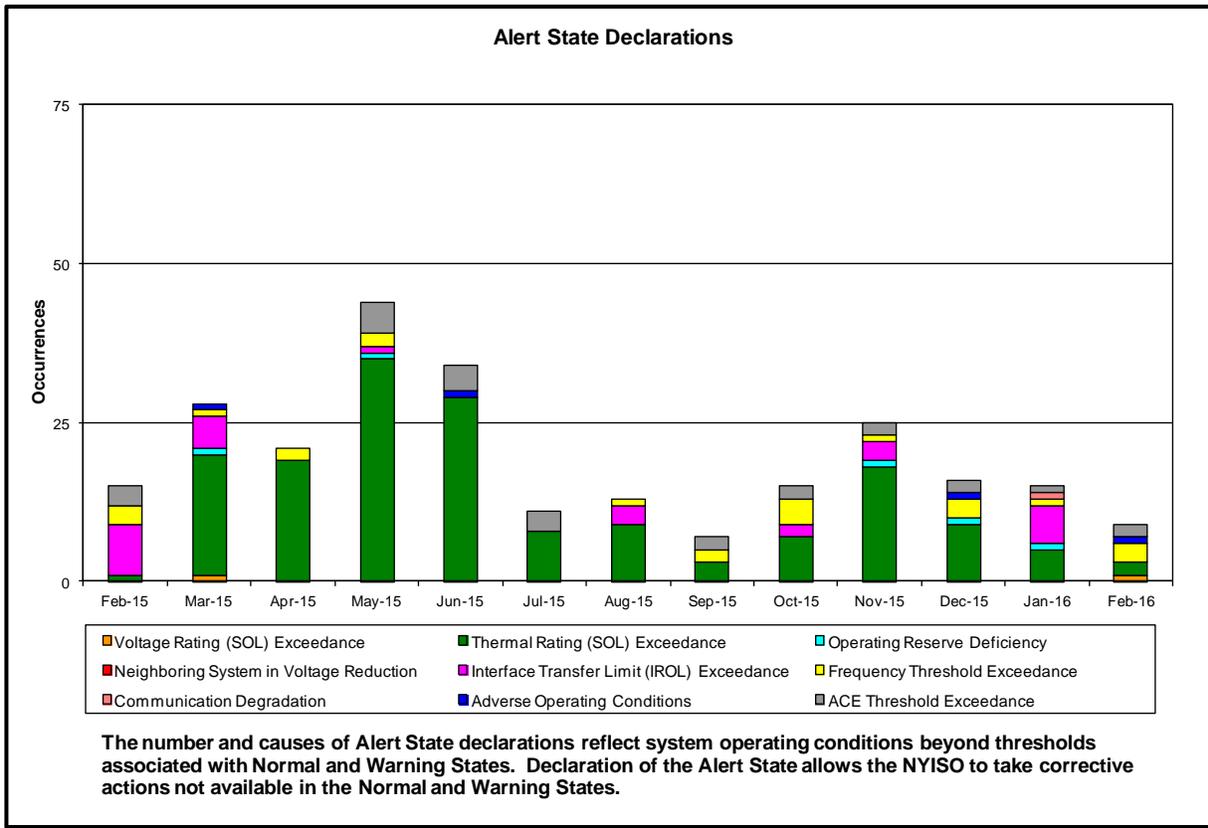
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$3.18	\$11.06
NY Savings from PJM-NY Coordinated Transaction Scheduling	\$0.31	\$0.12
NY Savings from NE-NY Coordinated Transaction Scheduling	(\$0.21)	(\$0.60)
Total NY Savings	\$3.28	\$10.58
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.35	\$0.47
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.08	\$0.27
Total Regional Savings	\$0.43	\$0.74

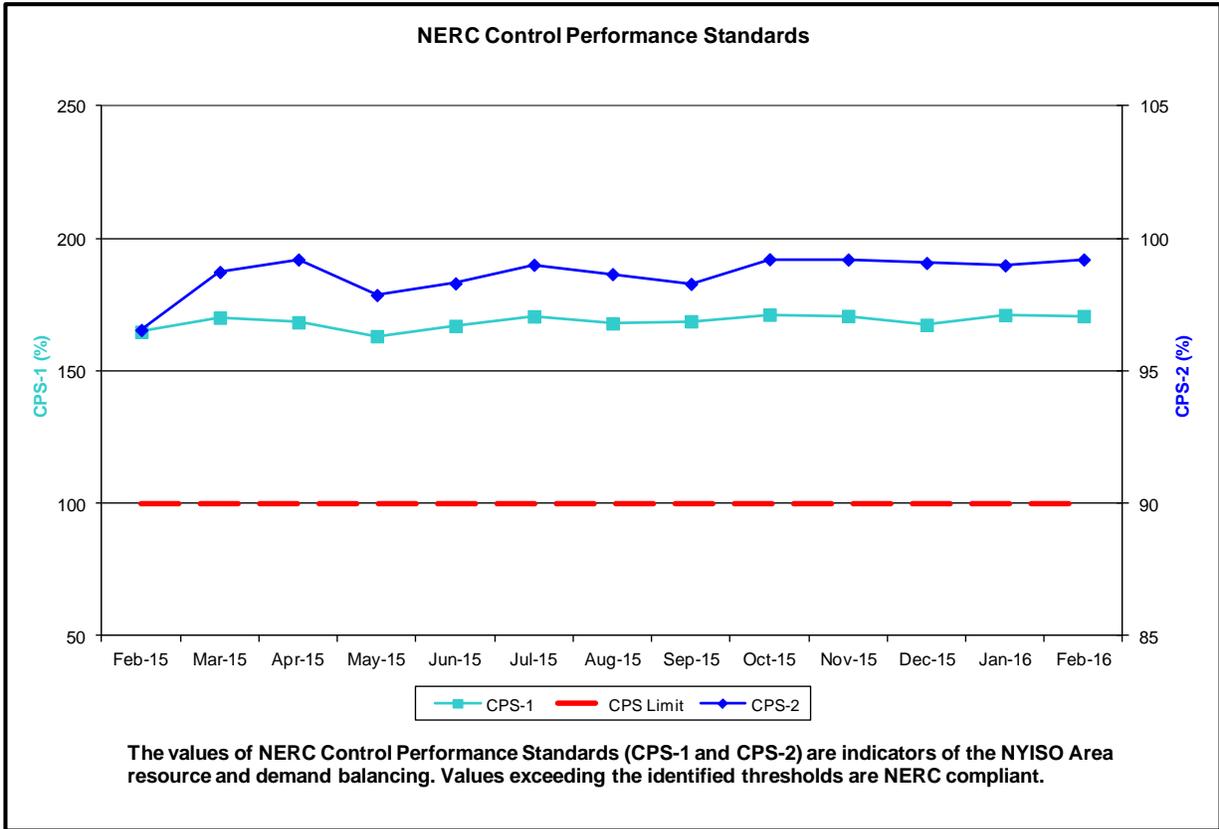
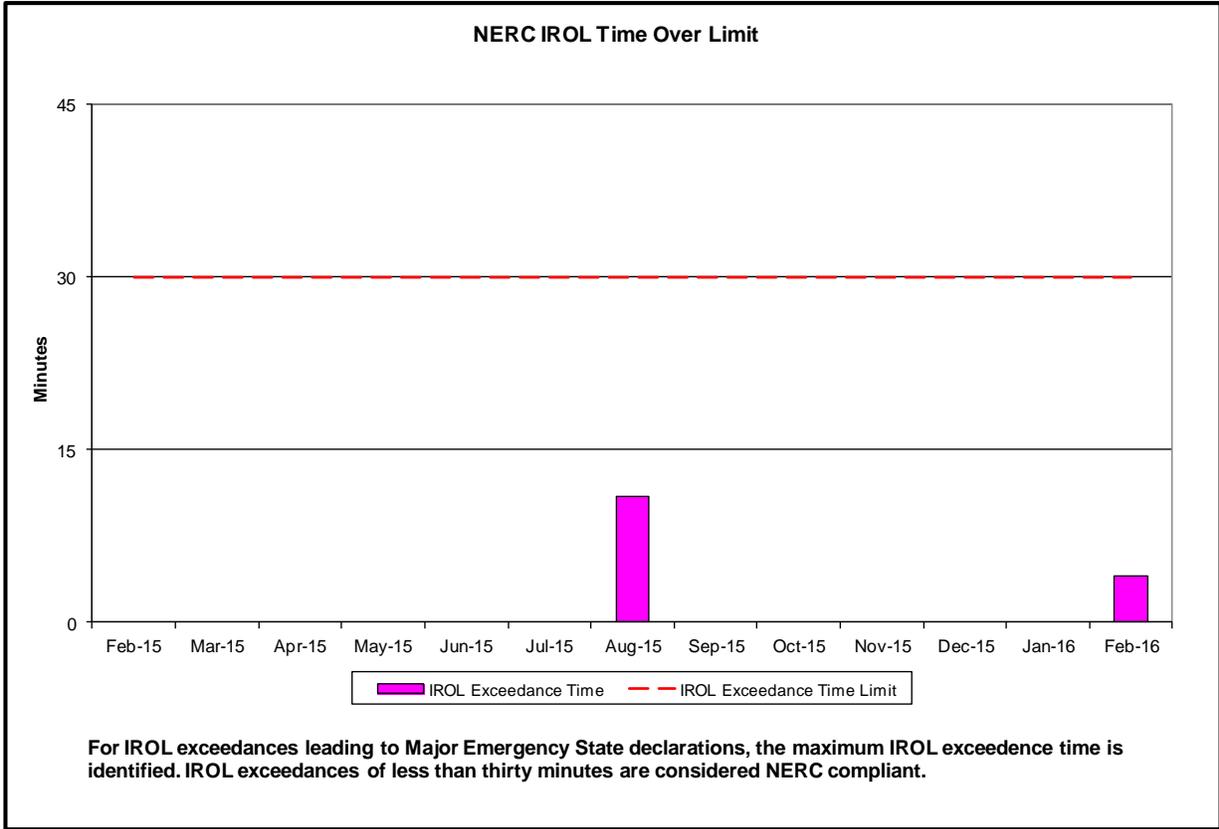
- Statewide uplift cost monthly average was (\$0.18)/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and the price delta.

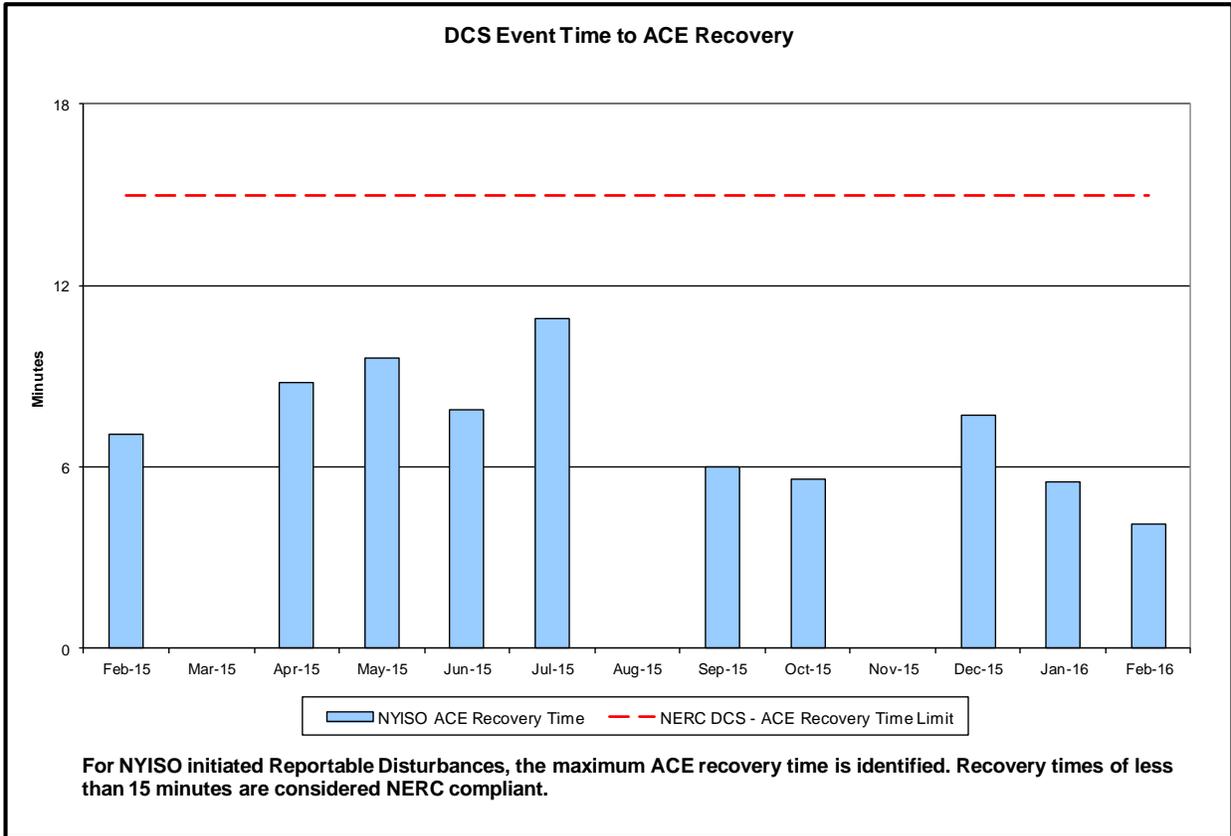
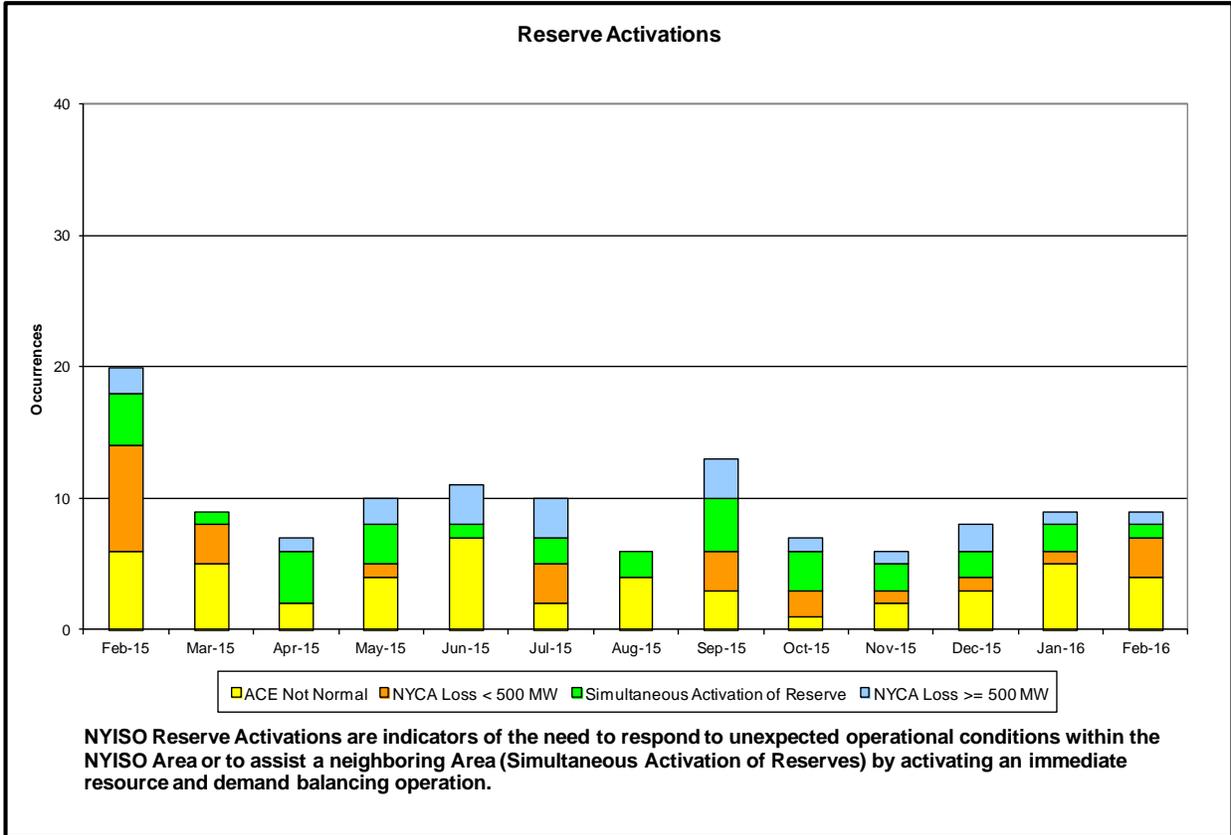
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
March 2016 Spot Price	\$0.54	\$3.14	\$5.81	\$1.52
February 2016 Spot Price	\$1.46	\$3.15	\$5.84	\$1.53
Delta	(\$0.92)	(\$0.01)	(\$0.03)	(\$0.01)

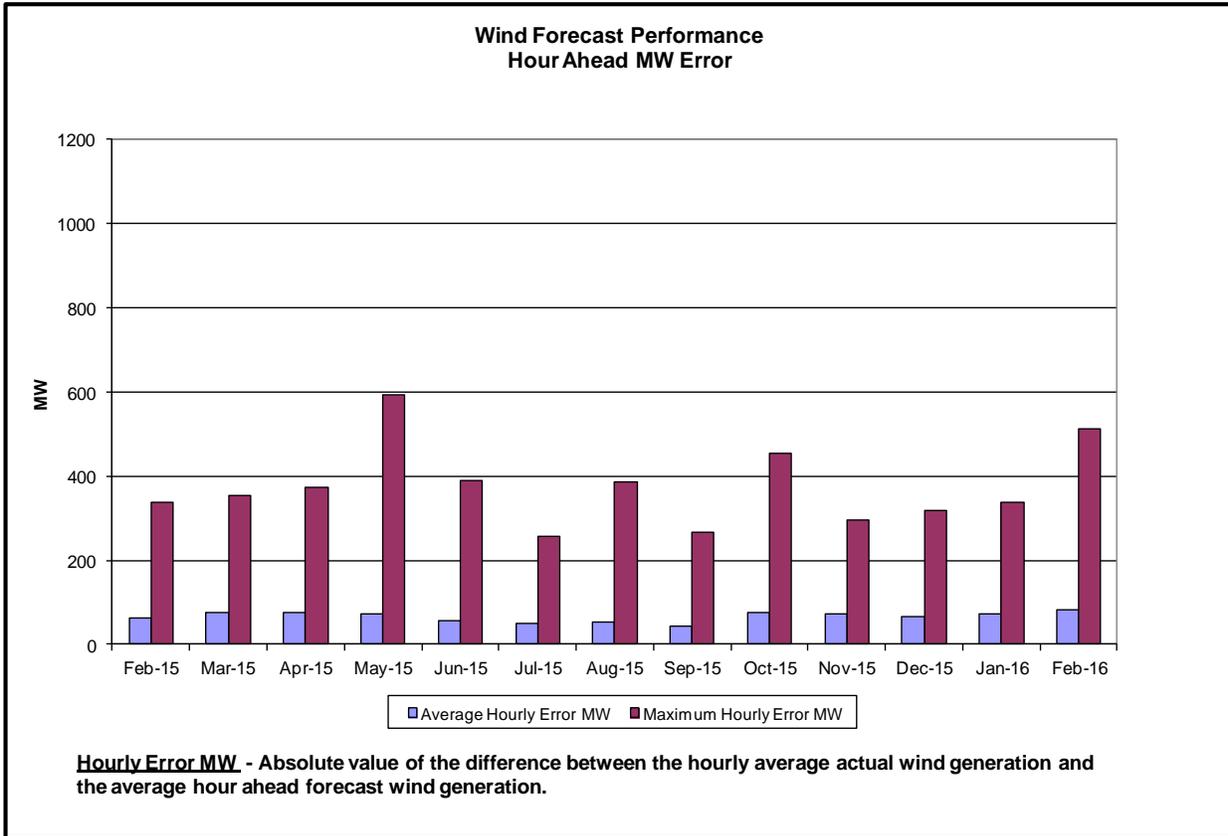
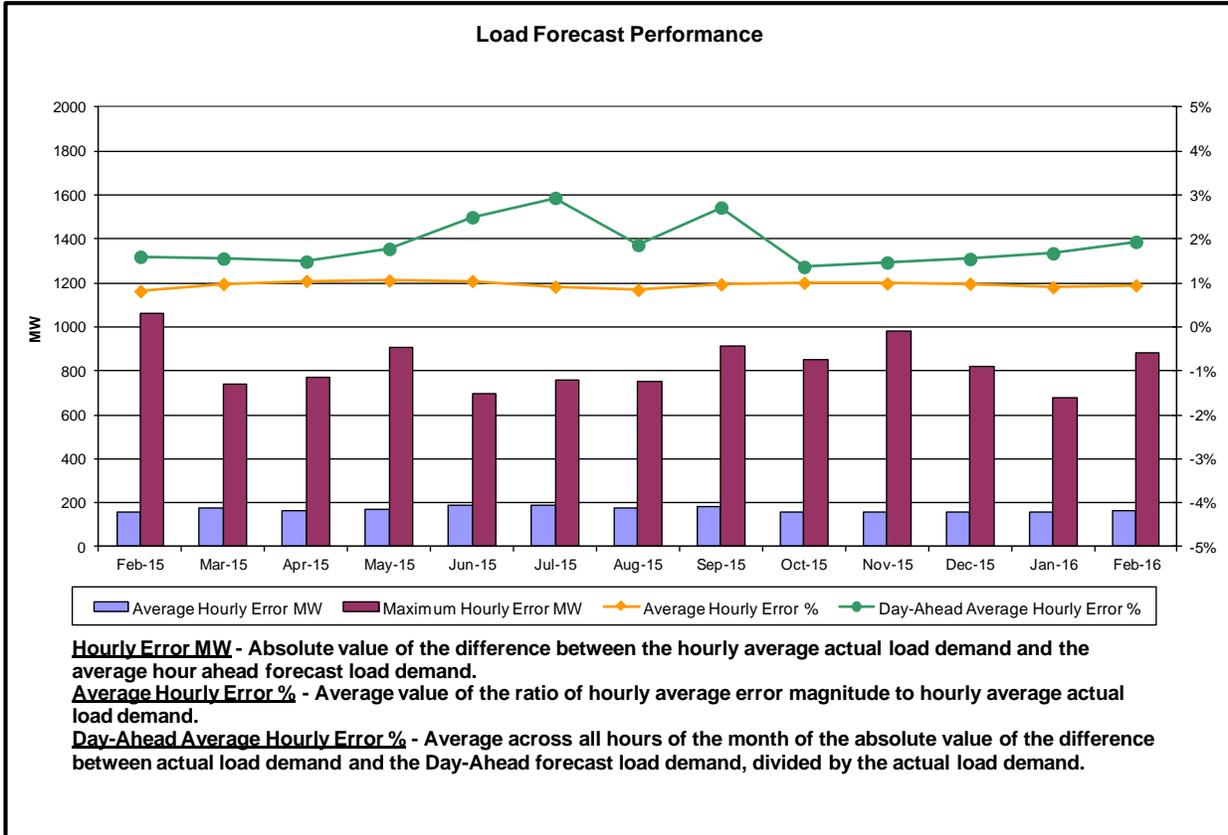
- NYCA - Price decreased \$0.92 due to an increase in net Imports which was partially offset by an increase in Unsold and Unoffered MW as well as a decrease in Generation UCAP Available.

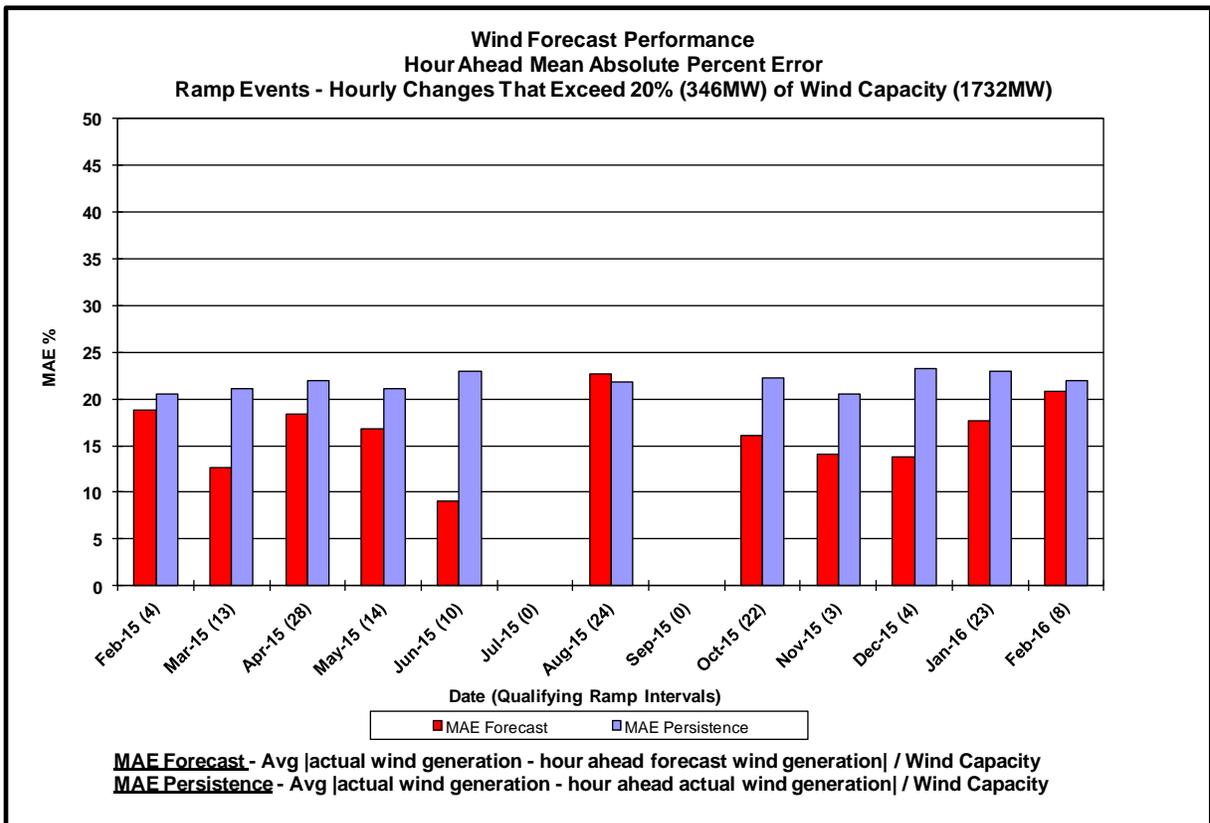
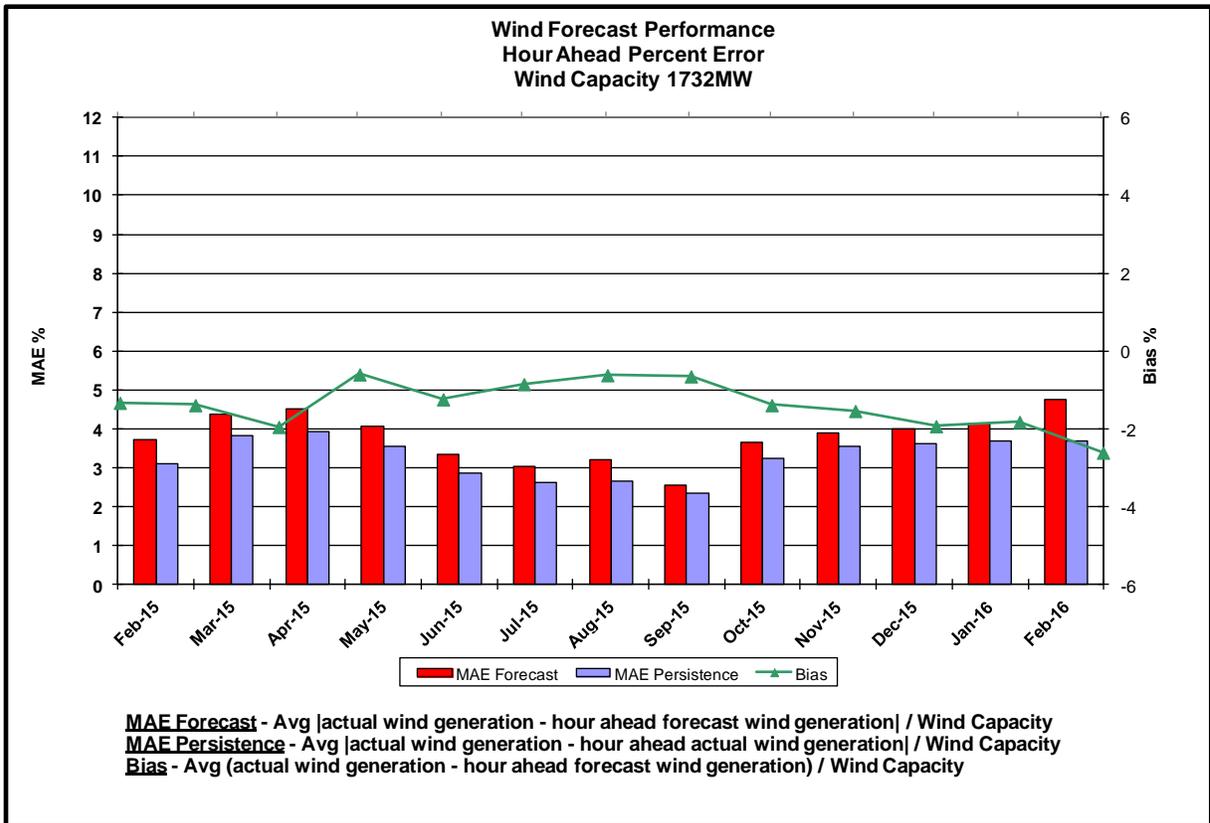
Reliability Performance Metrics

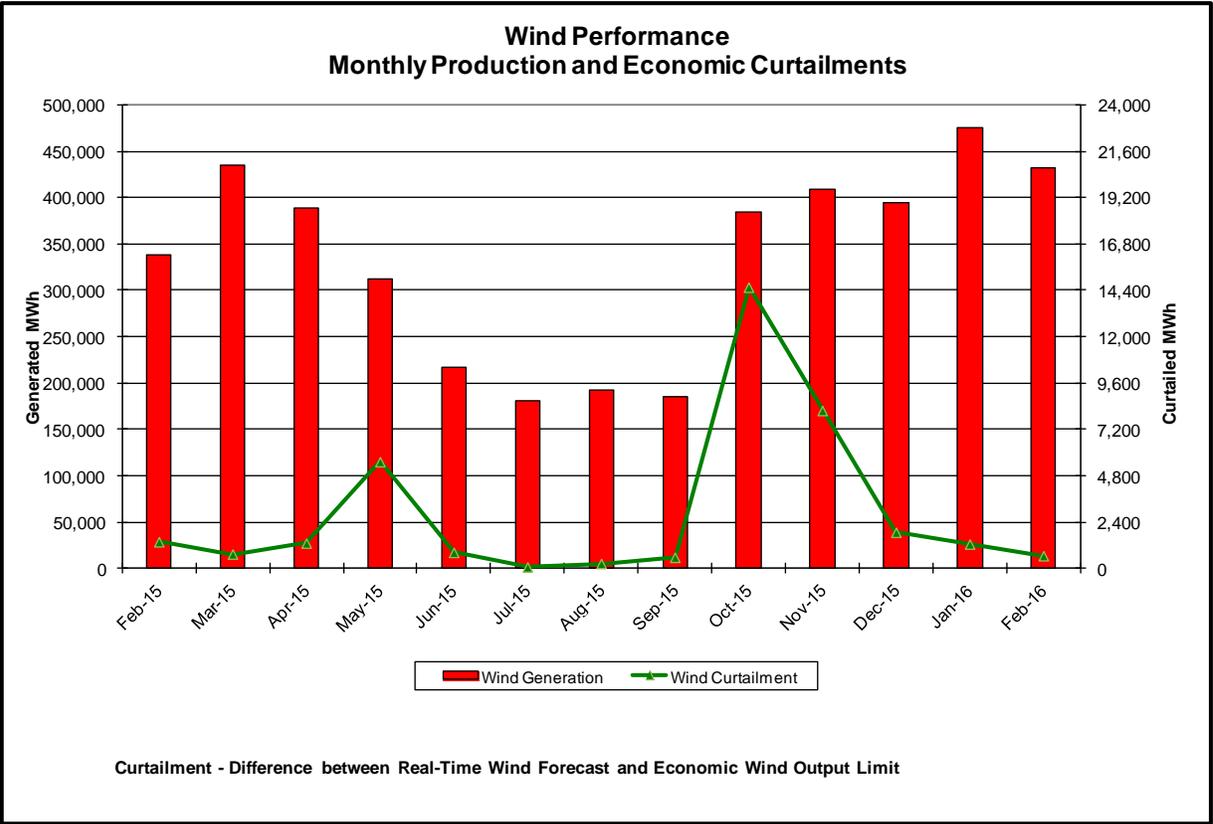
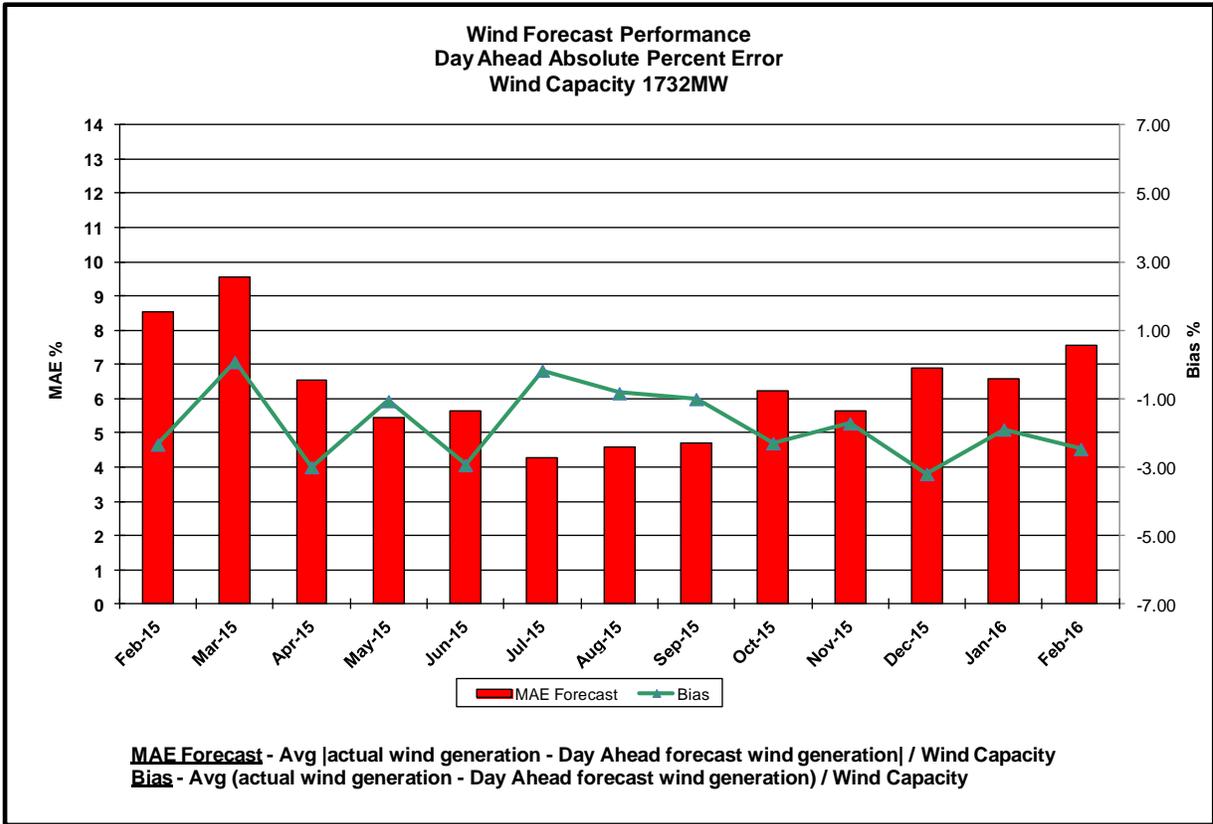


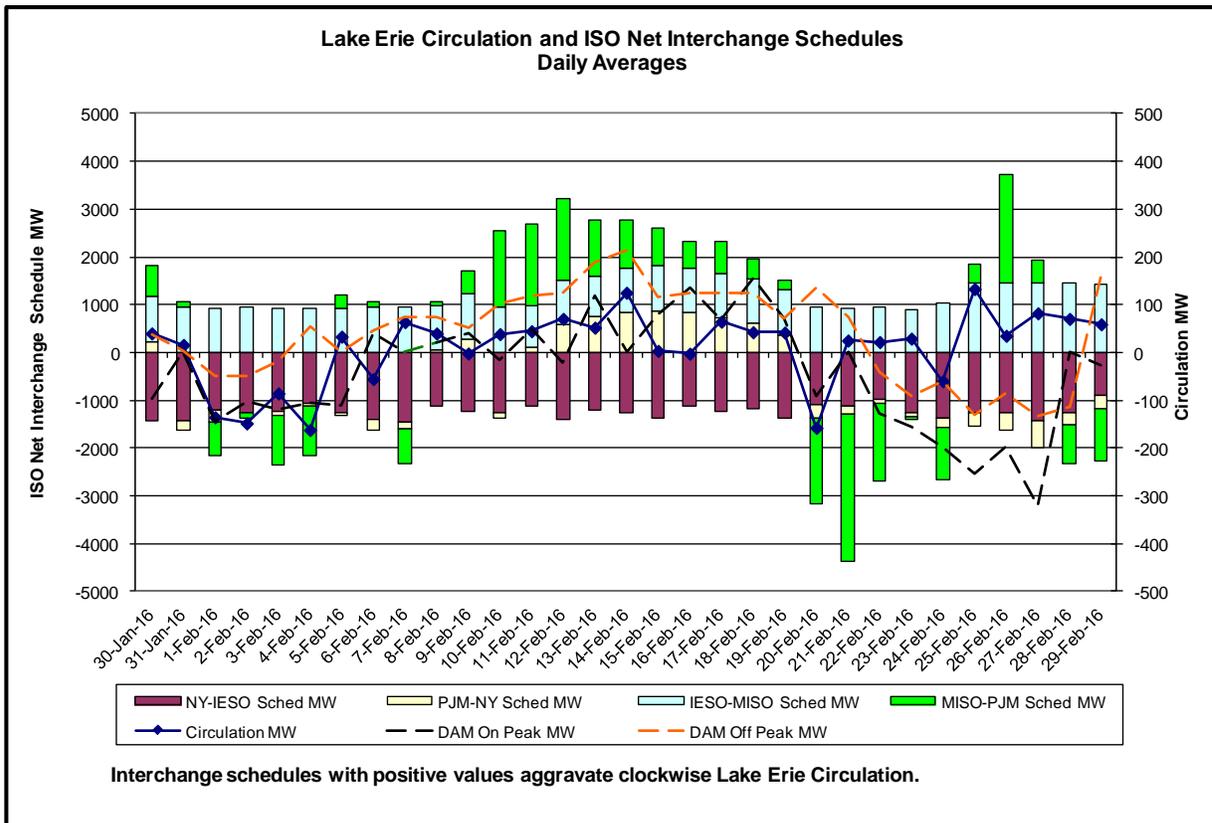
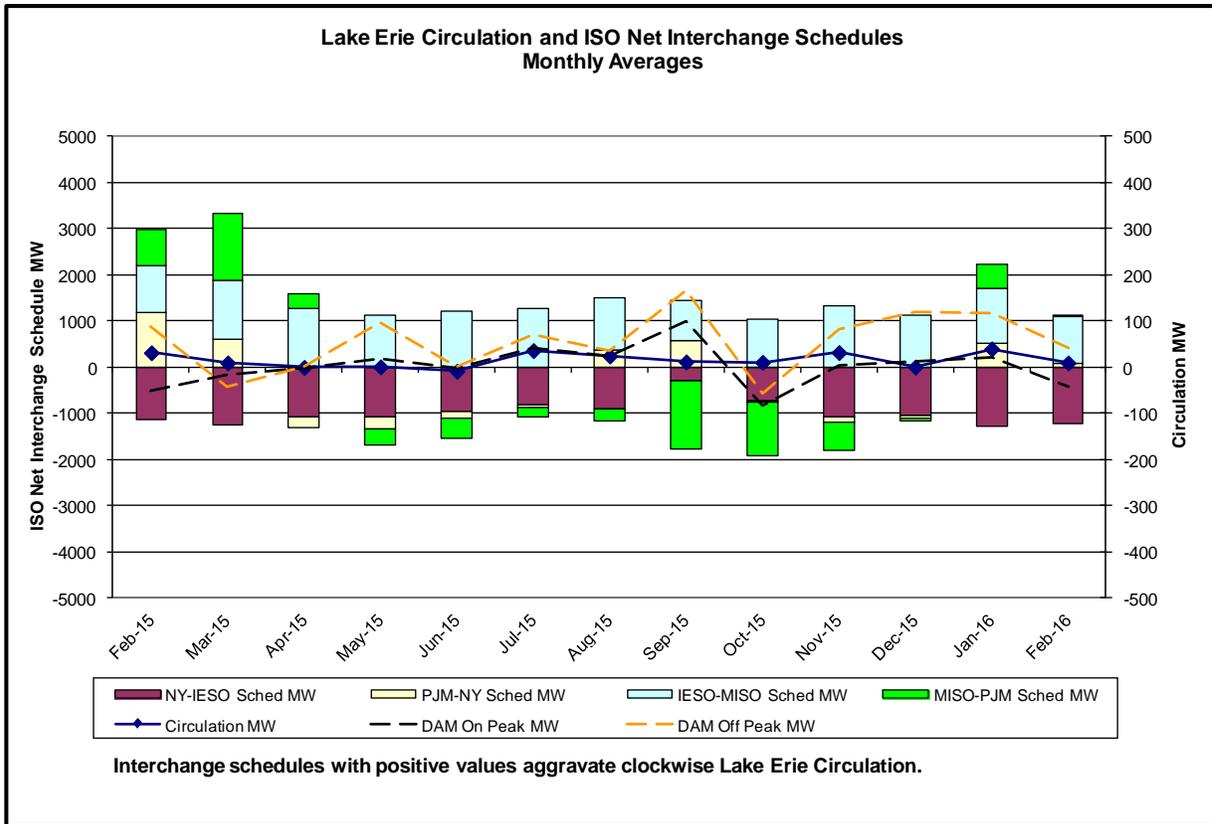




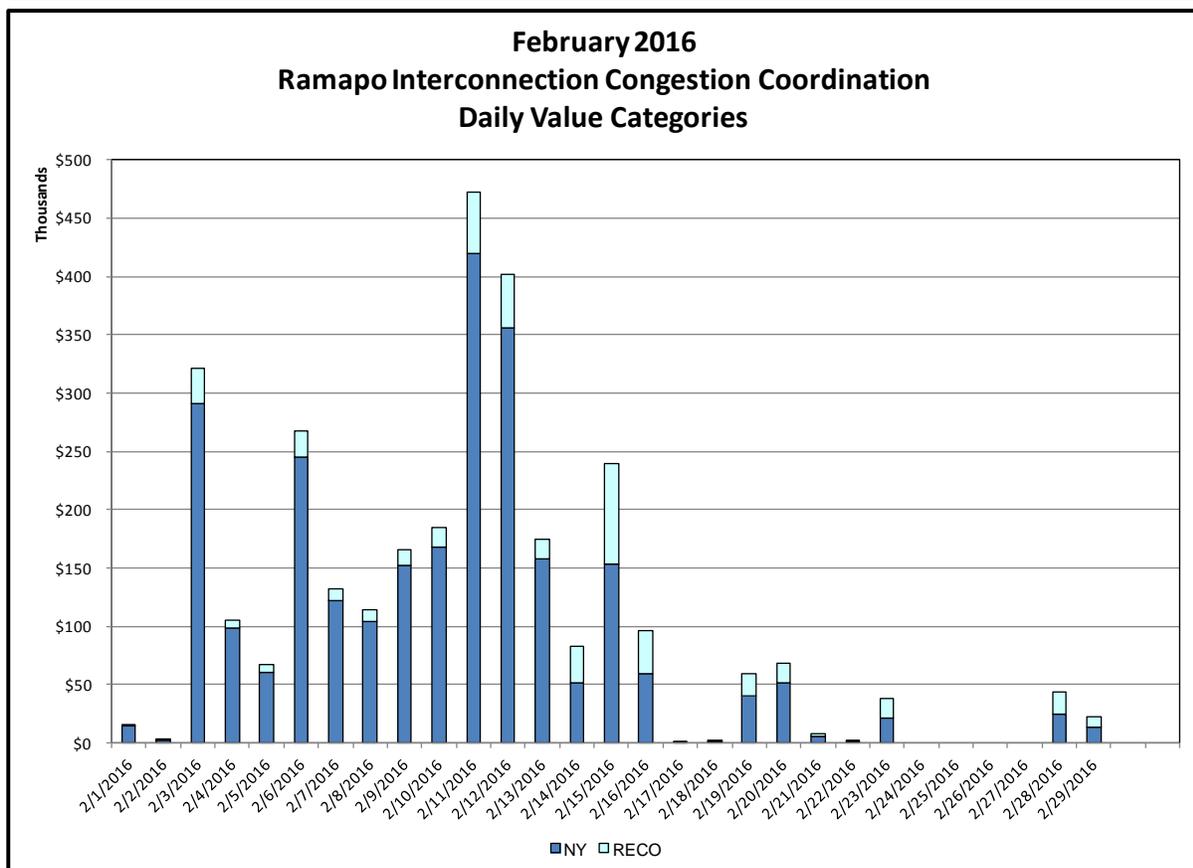
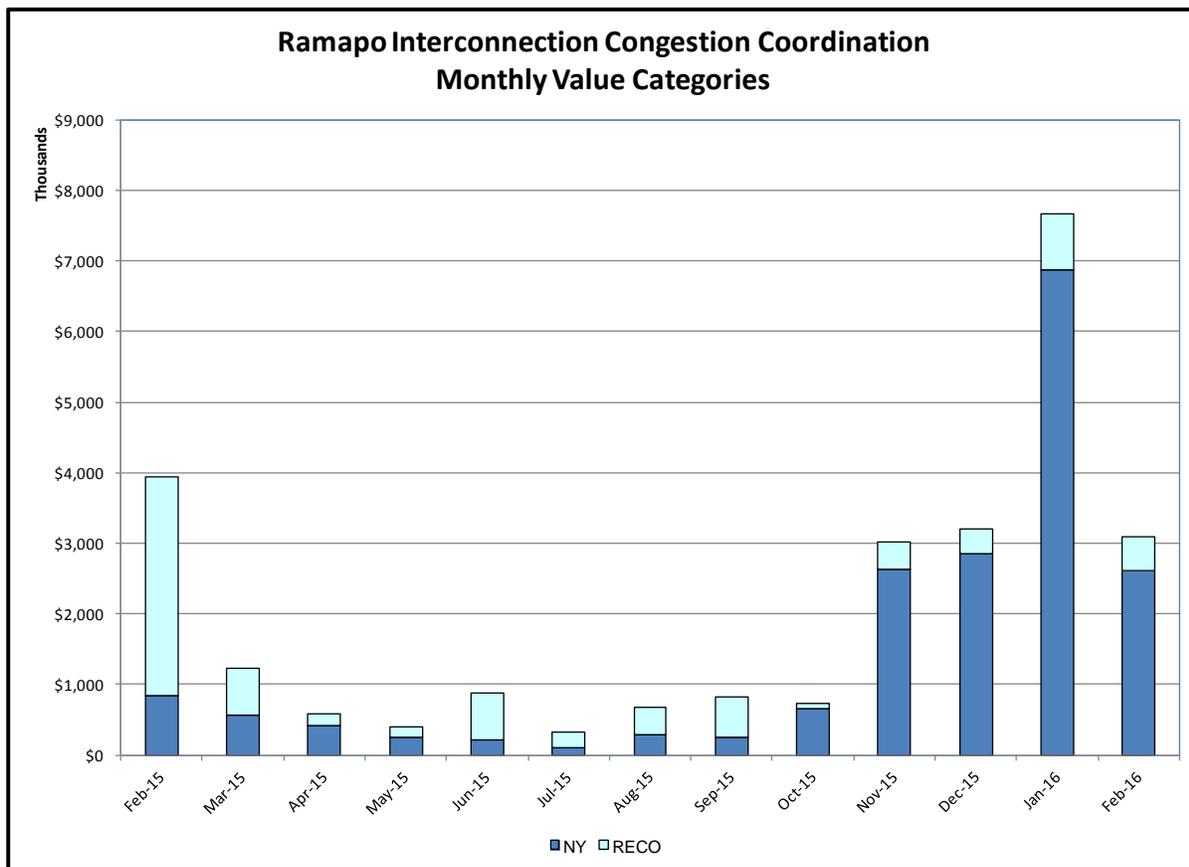






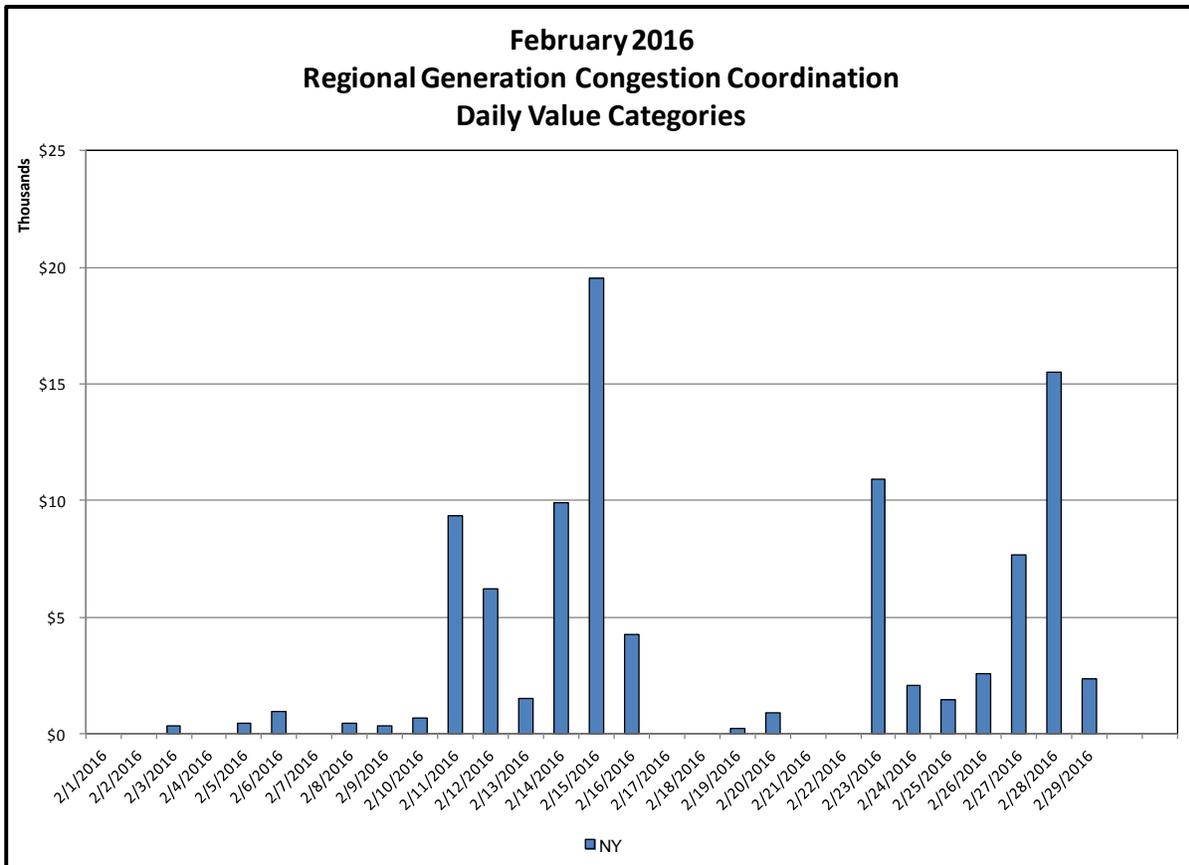
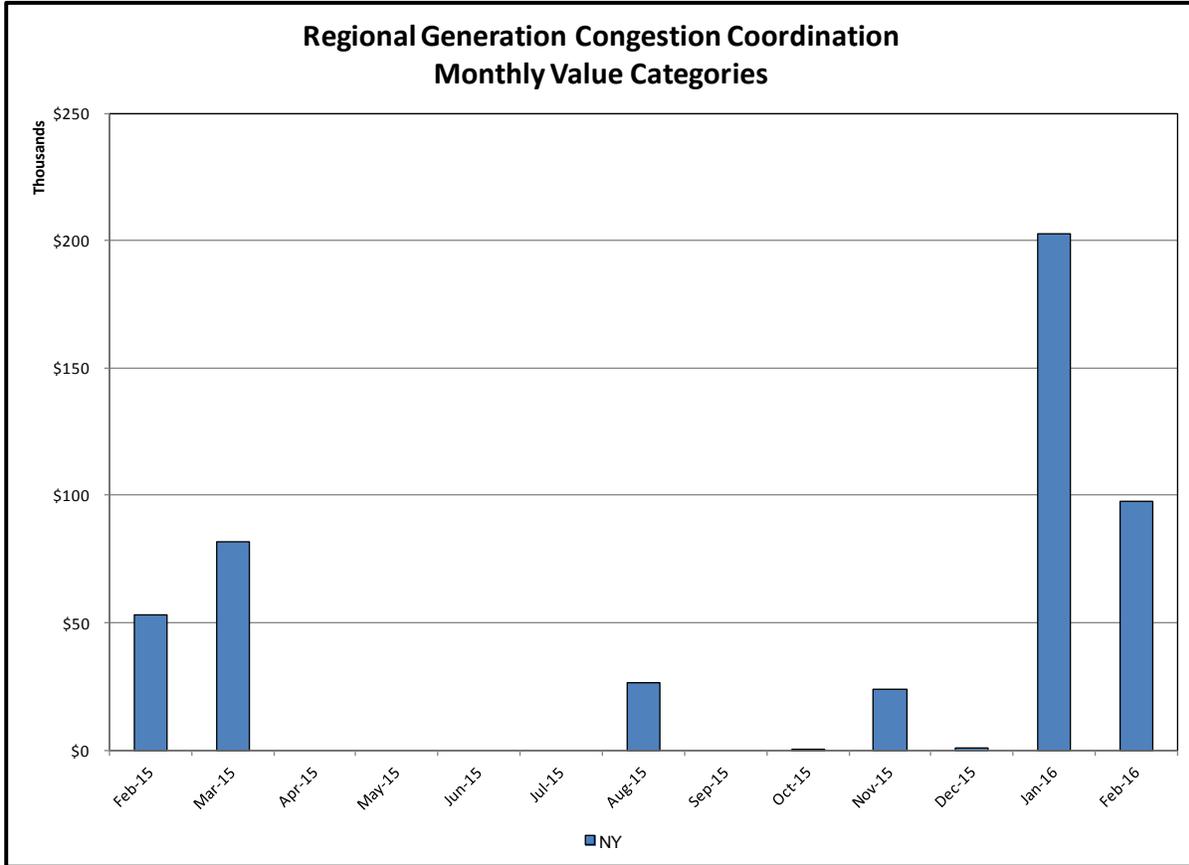


Broader Regional Market Performance Metrics



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.



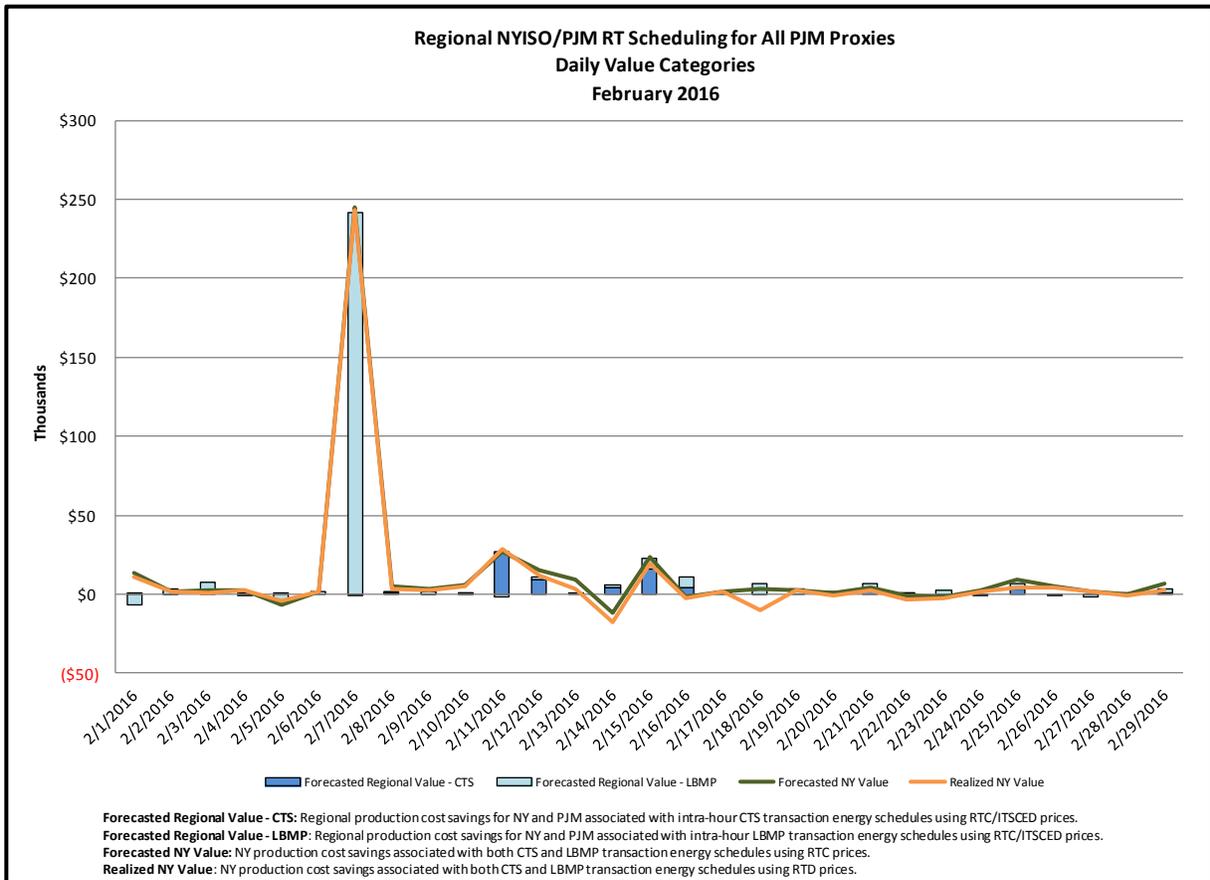
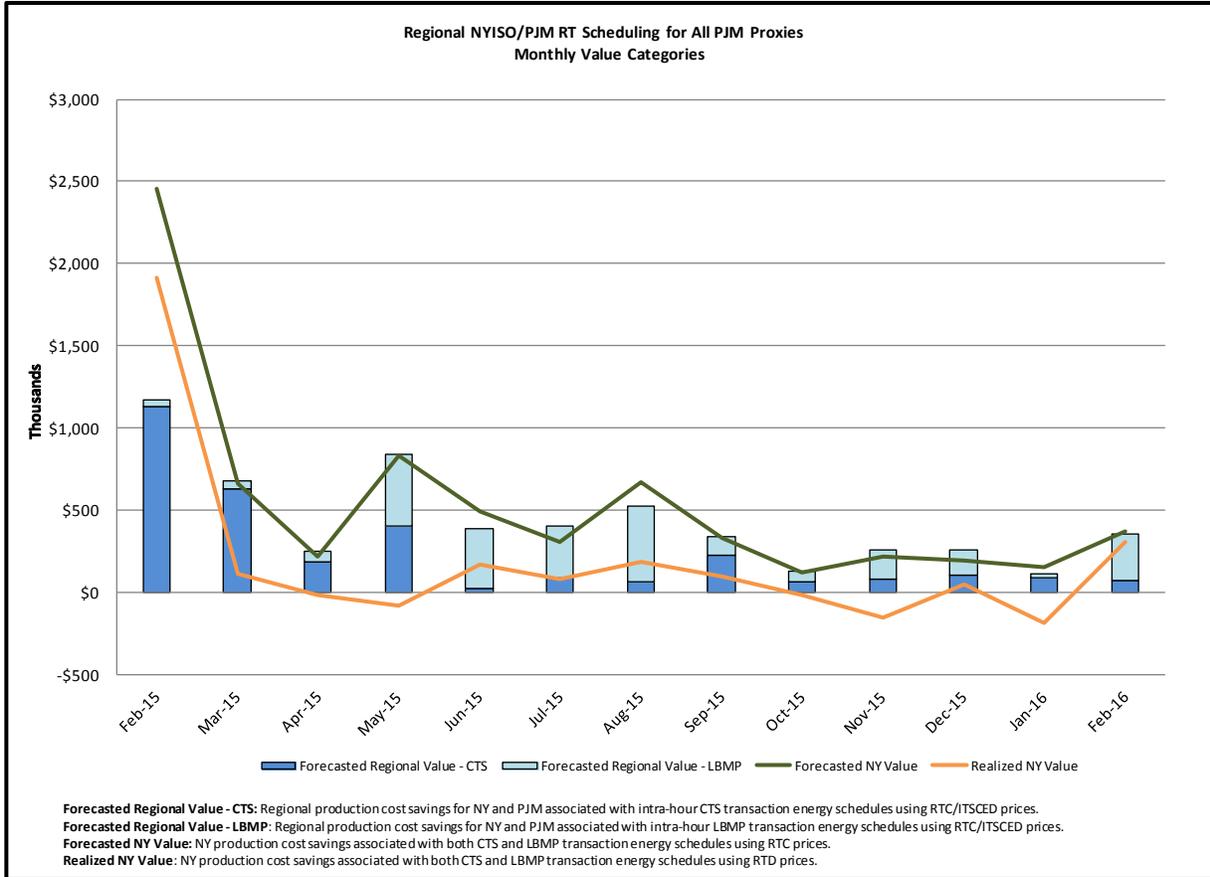
Regional Generation Congestion Coordination

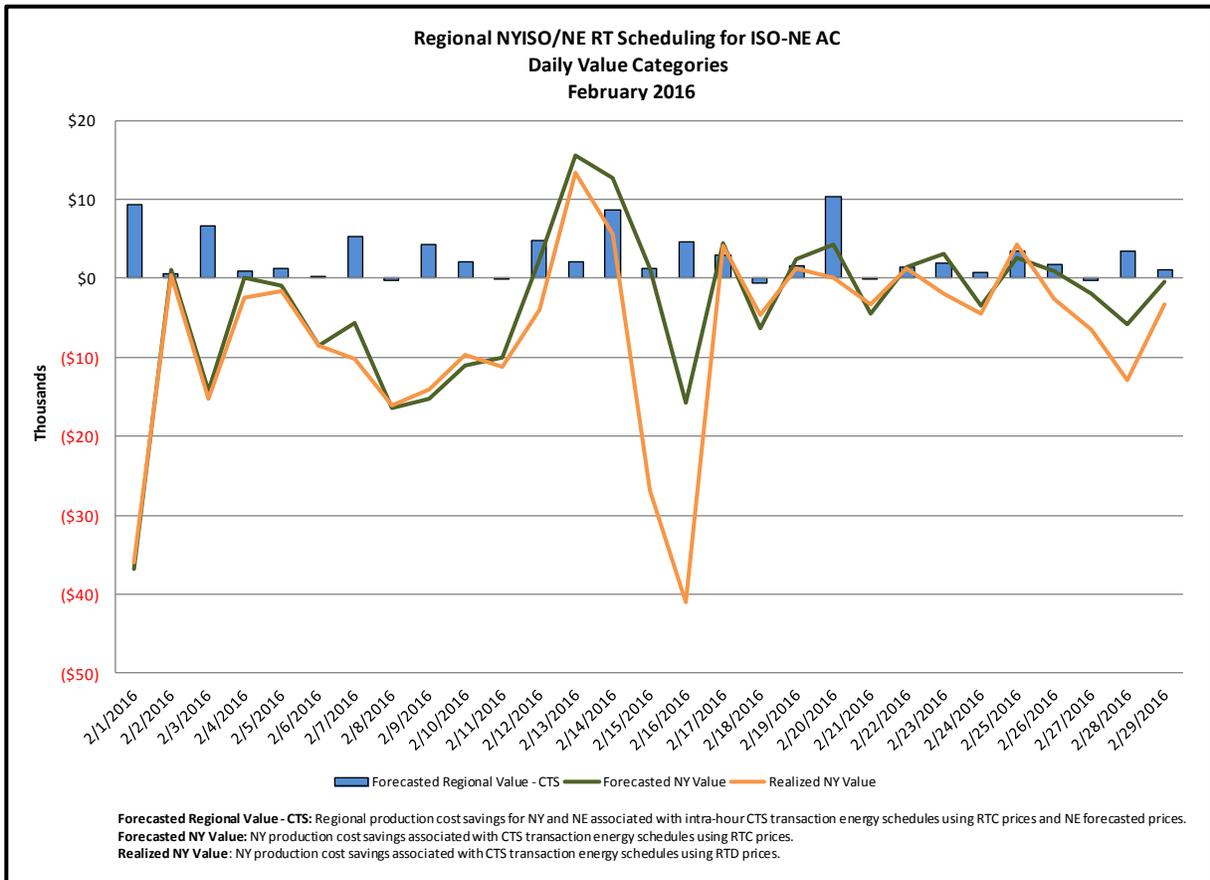
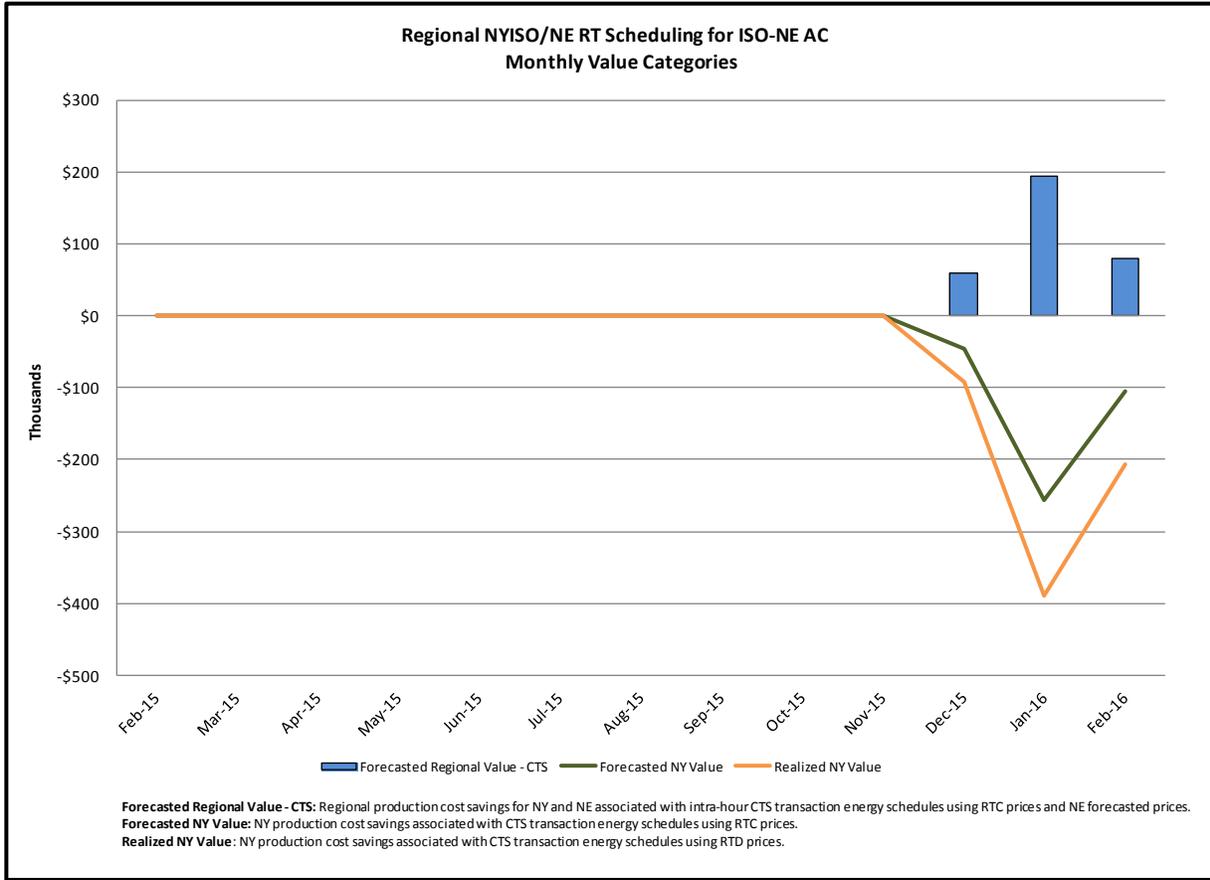
Category

NY

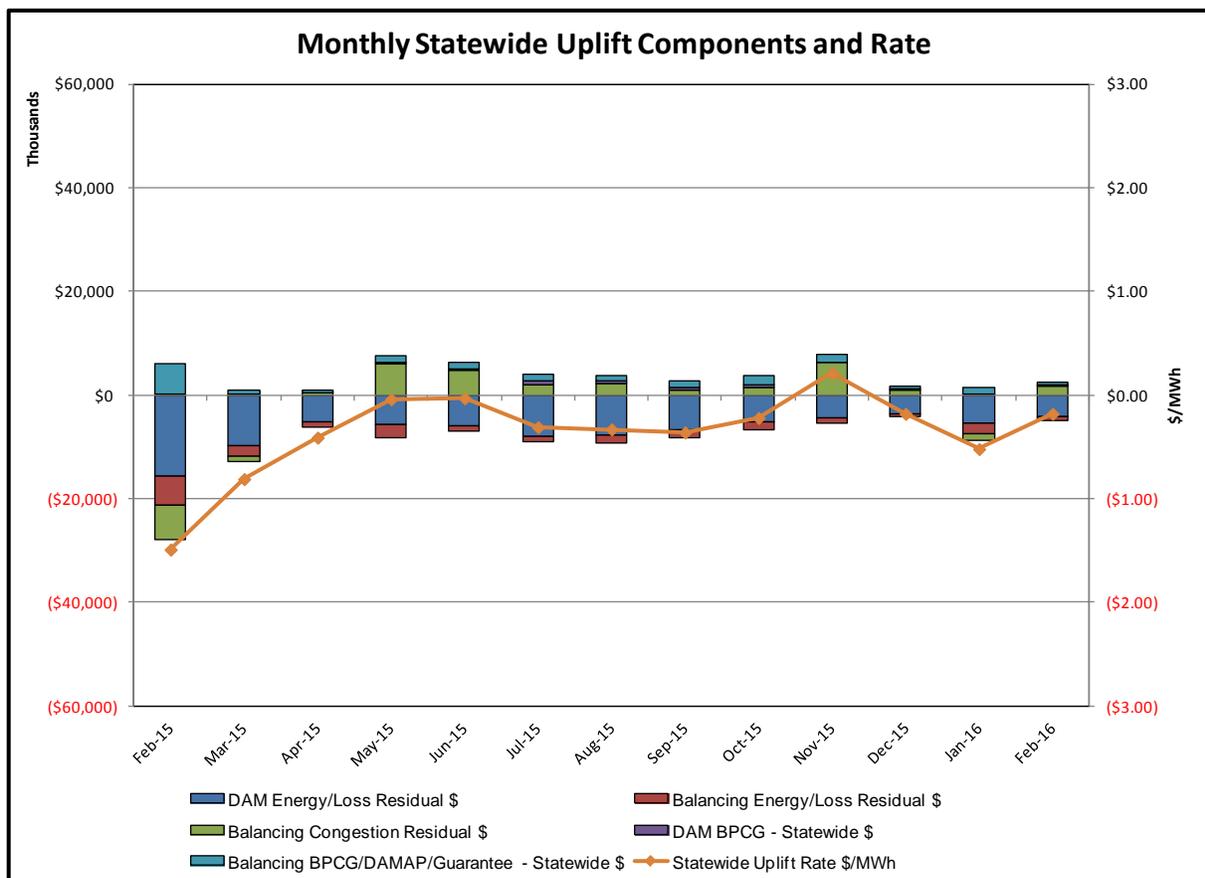
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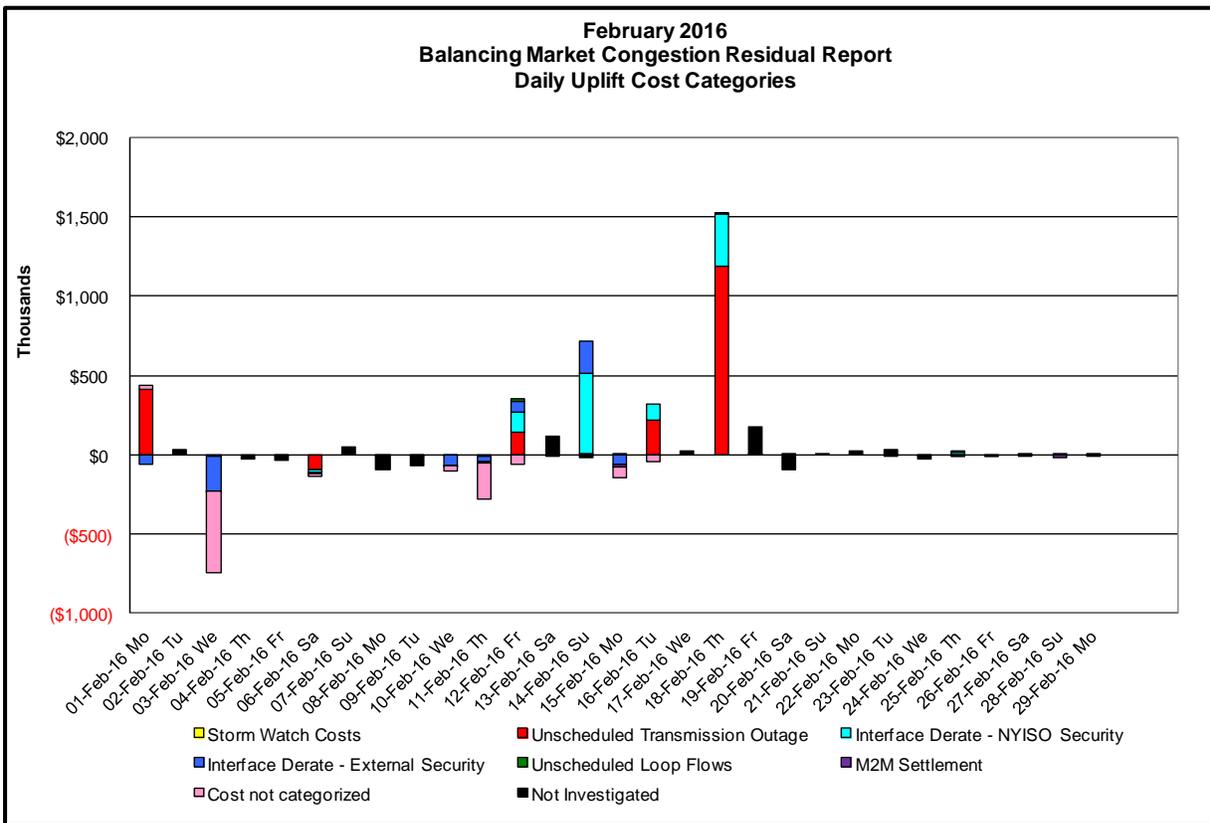
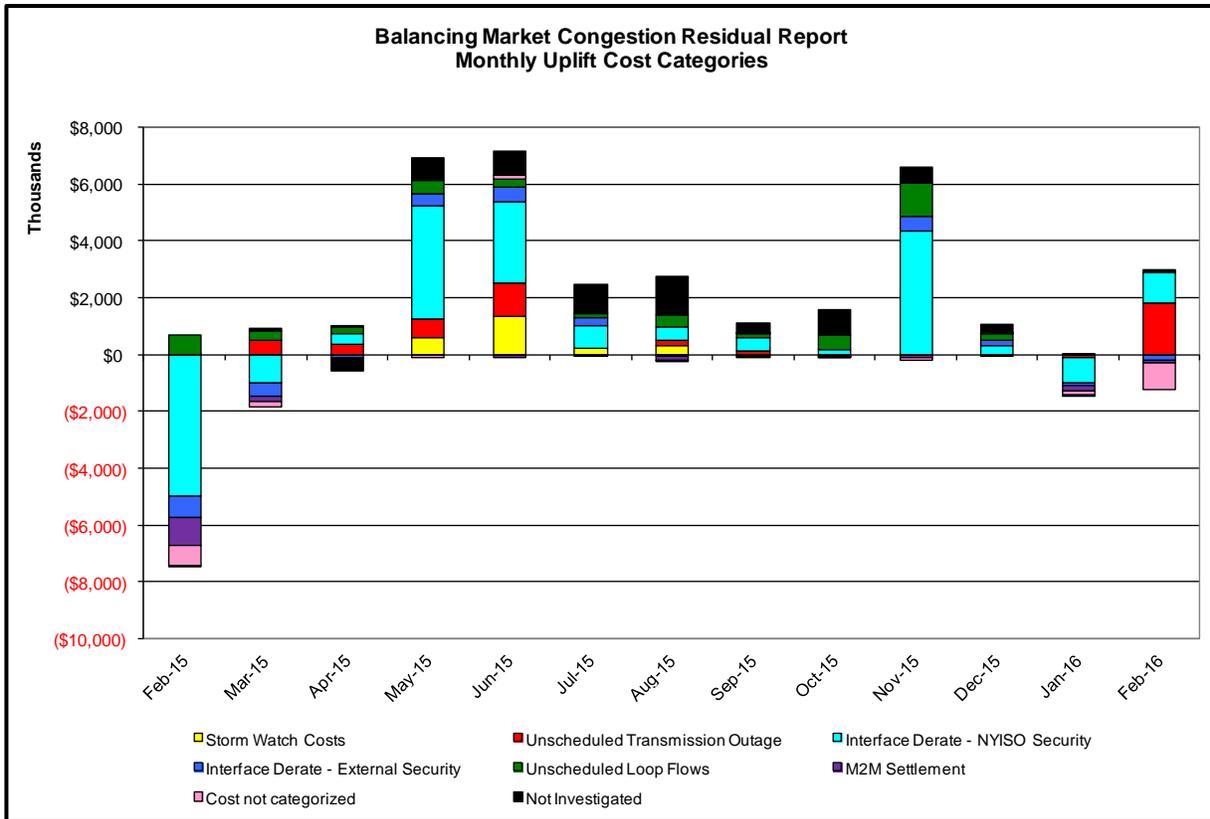
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





Day's investigated in February: 1,3,6,10,11,12,14,15,16,18

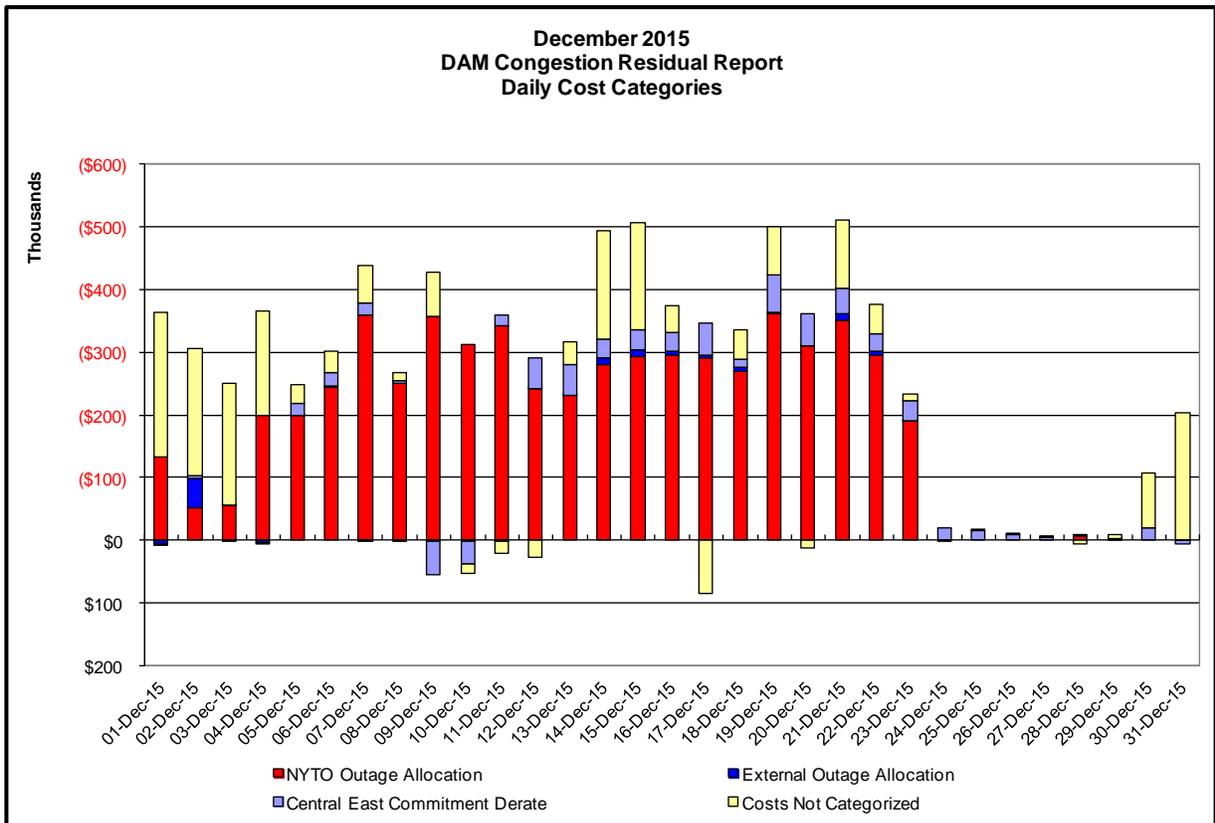
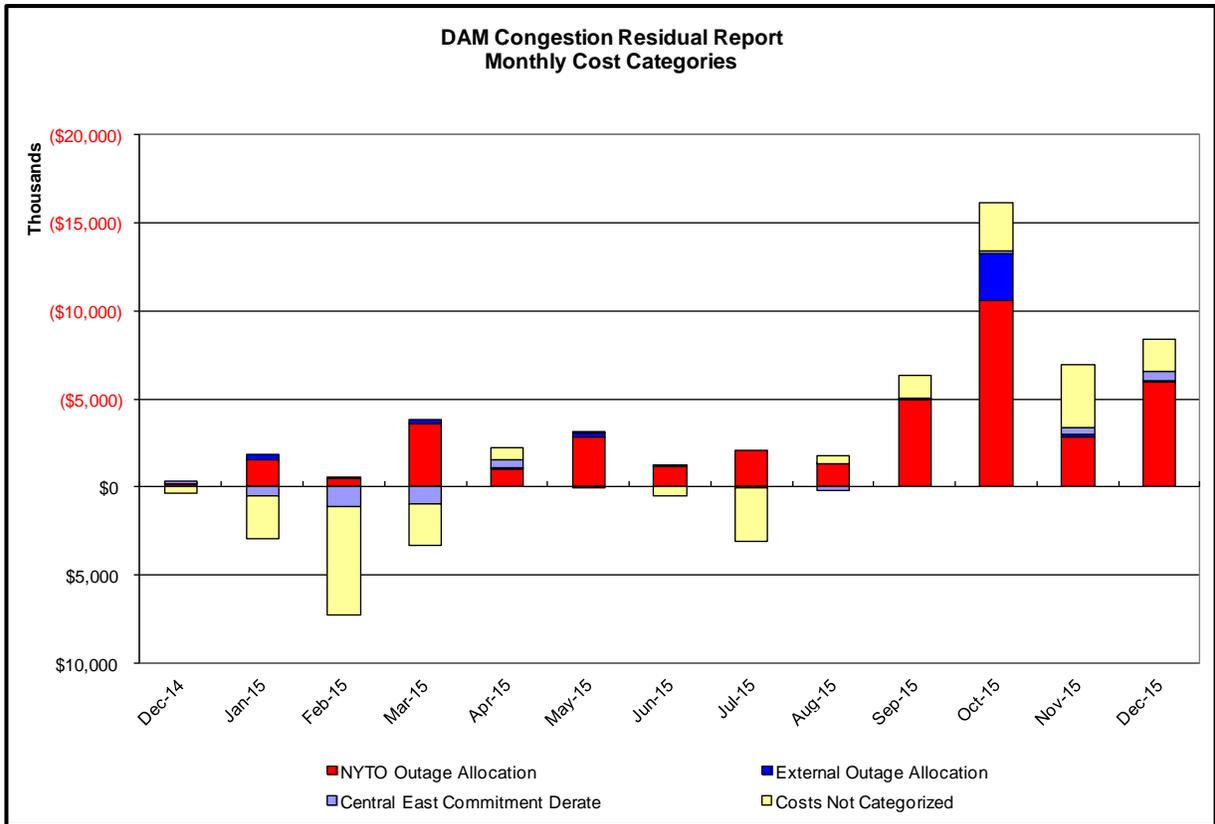
Event	Date (yyyymmdd)	Hours	Description
	2/1/2016	9-12,14-21	Early return to service East Garden City-Valley Stream 138kV (#262)
	2/1/2016	1,4,23	NE_AC DNI Ramp Limit
	2/3/2016	23	Uprate Central East
	2/3/2016	12,15,17	NE_AC DNI Ramp Limit
	2/3/2016	18	PJM_AC DNI Ramp Limit
	2/6/2016	10-22	Early return to service Rainey-Mott Haven 345kV (#Q11)
	2/6/2016	7,23	Uprate Central East
	2/6/2016	13	NE_AC DNI Ramp Limit
	2/10/2016	4	Uprate Central East
	2/10/2016	0-4,10,11,15	NE_AC-NY Scheduling Limit
	2/11/2016	0,1,9	Uprate Central East
	2/11/2016	23	HQ_CHAT-NY Scheduling limit
	2/11/2016	18,19	IESO_AC DNI Ramp Limit
	2/11/2016	10	NE_AC-NY Scheduling Limit
	2/11/2016	9	NE_AC DNI Ramp Limit
	2/11/2016	0	NE_NNC1385-NY Scheduling limit
	2/12/2016	8,9,12,13,16	Forced outage Sprainbrook-Tremont 345kV (#X28)
	2/12/2016	6,8	NYCA DNI Ramp Limit
	2/12/2016	8,9,12,13,16	Derate Central East
	2/12/2016	0	Uprate Central East
	2/12/2016	12,13,16	Derate Mott Haven-Dunwoodie 345kV (#72) for I/o Mott Haven-Dunwoodie 345kV (#71)
	2/12/2016	10	Uprate Mott Haven-Dunwoodie 345kV (#72) for I/o Mott Haven-Dunwoodie 345kV (#71)
	2/12/2016	8,9	Derate West 49th Street-SprainBrook 345kV (#M52)
	2/12/2016	2,3,5,6,9	HQ_CHAT-NY Scheduling limit
	2/12/2016	0,16	NE_AC DNI Ramp Limit
	2/12/2016	6	PJM_AC DNI Ramp Limit
	2/12/2016	3,12	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	2/14/2016	0	Extended outage Mott Haven-Rainey 345kV (#Q11)
	2/14/2016	9,10,19-21	Derate Central East
	2/14/2016	17-19	Derate Dysinger East
	2/14/2016	9-22	Derate Mott Haven-Dunwoodie 345kV (#72) for I/o Mott Haven-Dunwoodie 345kV (#71)
	2/14/2016	11-15,22	HQ_CEDARS-NY Scheduling Limit
	2/14/2016	0,13,14	HQ_CHAT-NY Scheduling limit
	2/15/2016	8,10	NYCA DNI Ramp Limit
	2/15/2016	12-14	Derate Central East
	2/15/2016	4	Uprate Central East
	2/15/2016	12-14	Derate West 49th Street-SprainBrook 345kV (#M52)
	2/15/2016	0,1	HQ_CEDARS-NY Scheduling Limit
	2/15/2016	0-2,12-14	HQ_CHAT-NY Scheduling limit
	2/15/2016	8	HQ_CHAT DNI Ramp Limit
	2/15/2016	4,9,10,16,18,20,22	NE_AC DNI Ramp Limit
	2/16/2016	11,12,19-21	Early return to service East Garden City-Valley Stream 138kV (#262)
	2/16/2016	12,19-21	Derate Central East
	2/18/2016	8-22	Early return to service East Garden City-Valley Stream 138kV (#262)
	2/18/2016	17,18,20	Derate Central East

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
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	

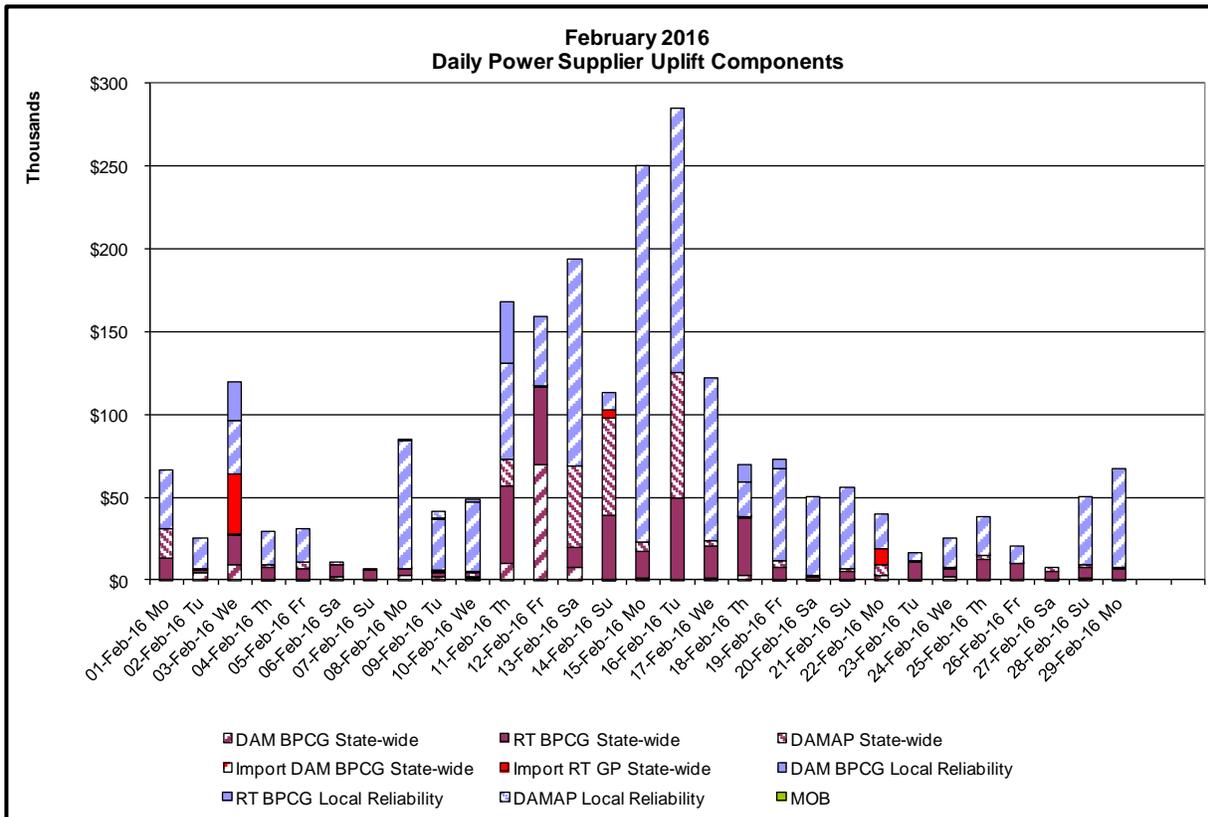
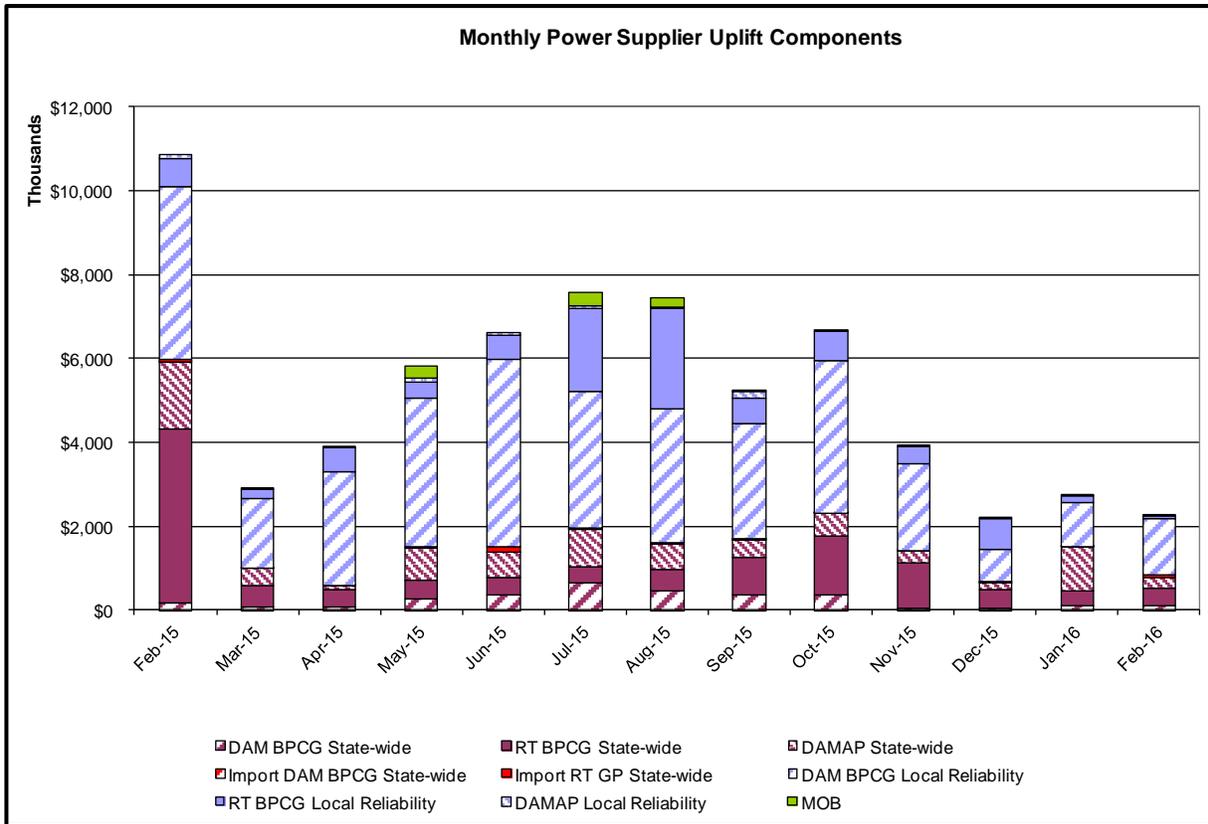
Monthly Balancing Market Congestion Report Assumptions/Notes

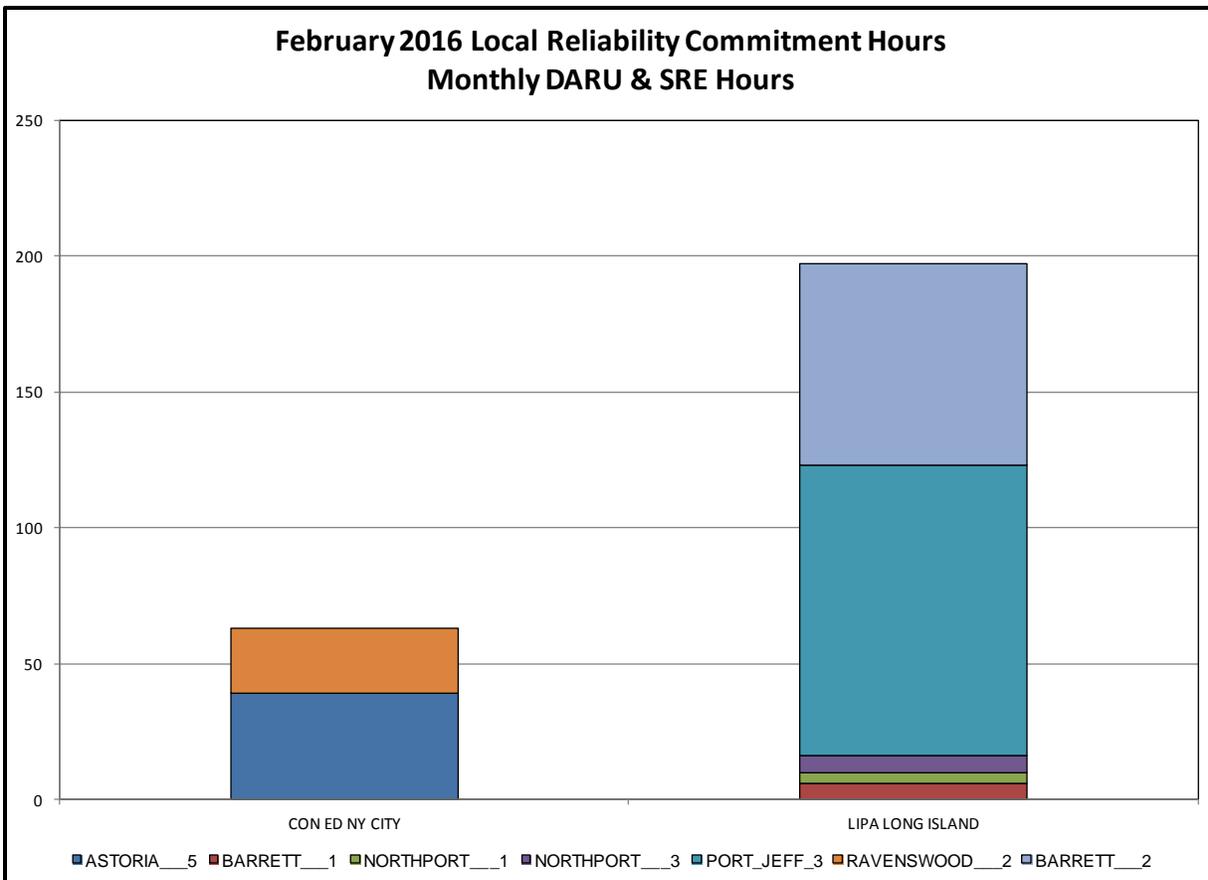
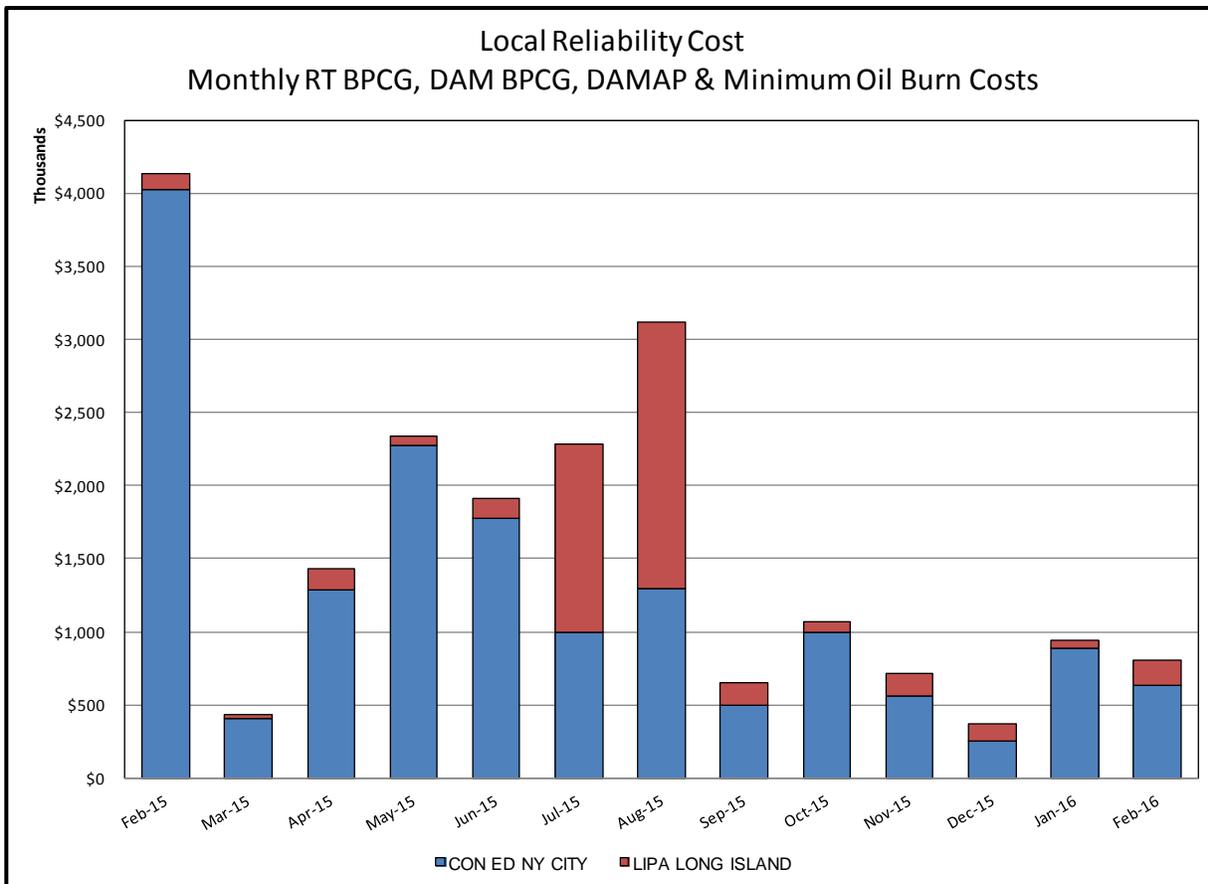
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

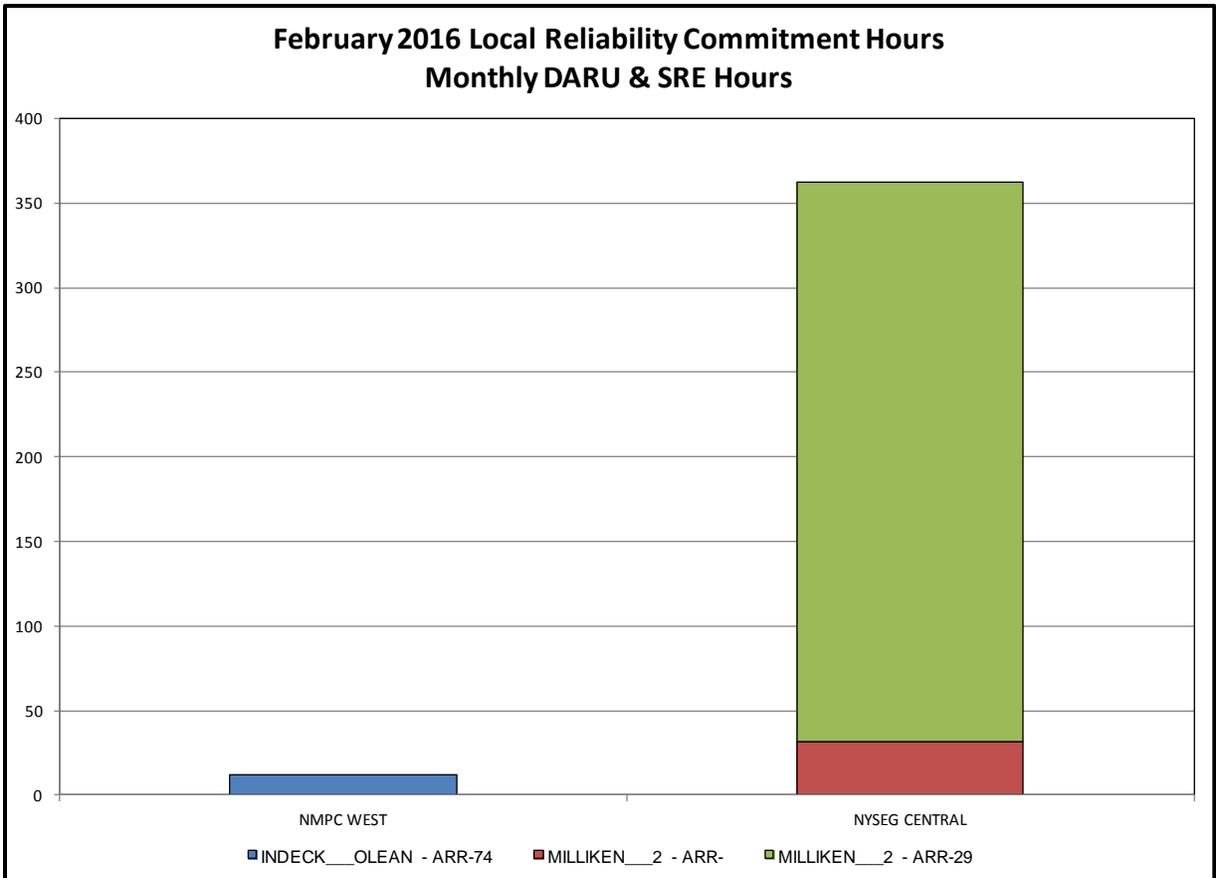
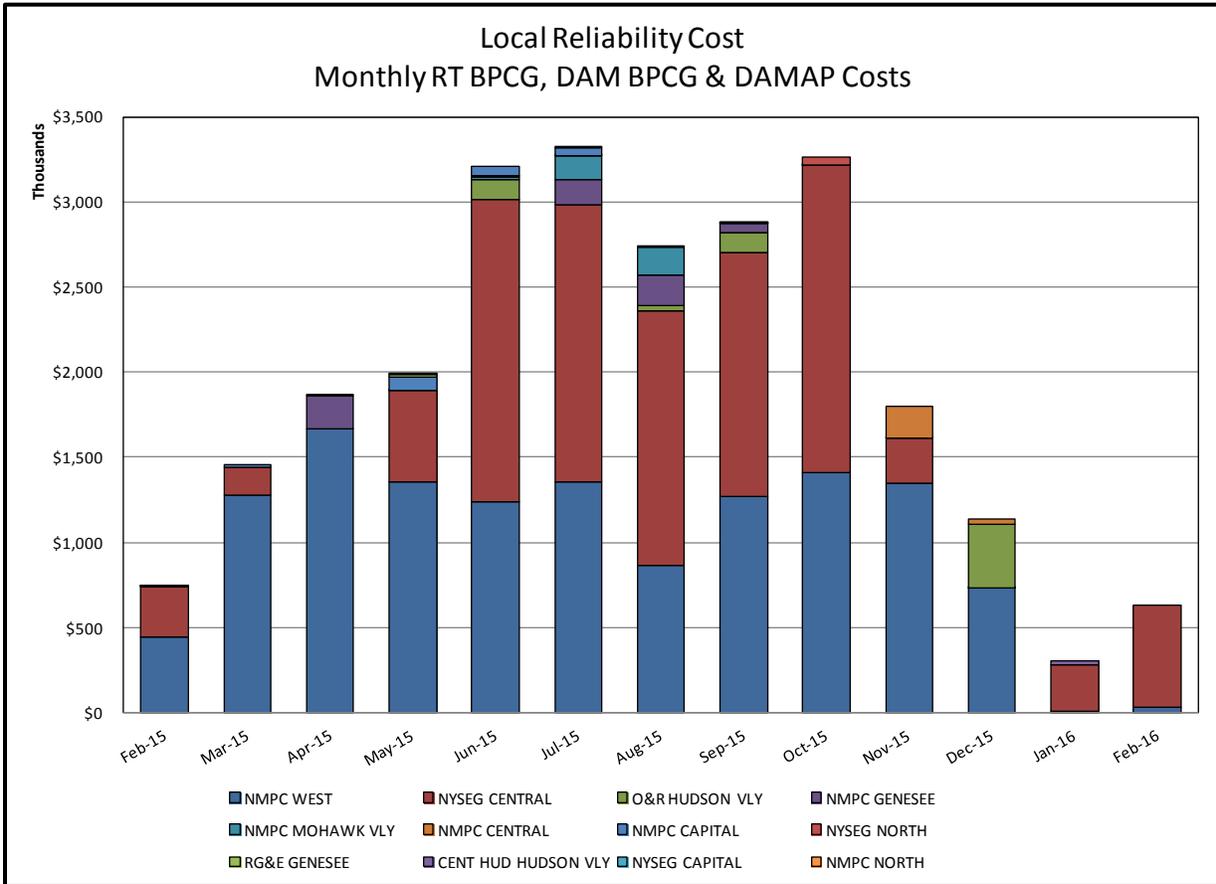


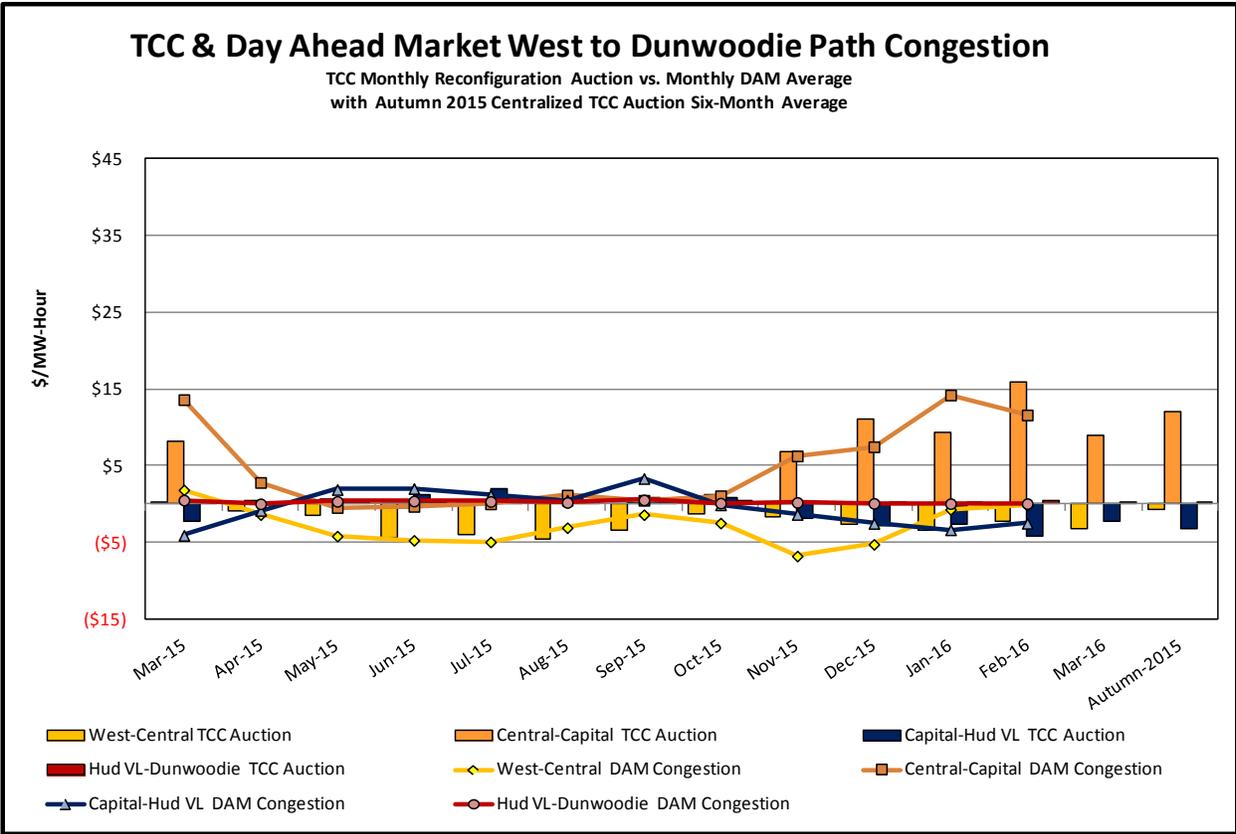
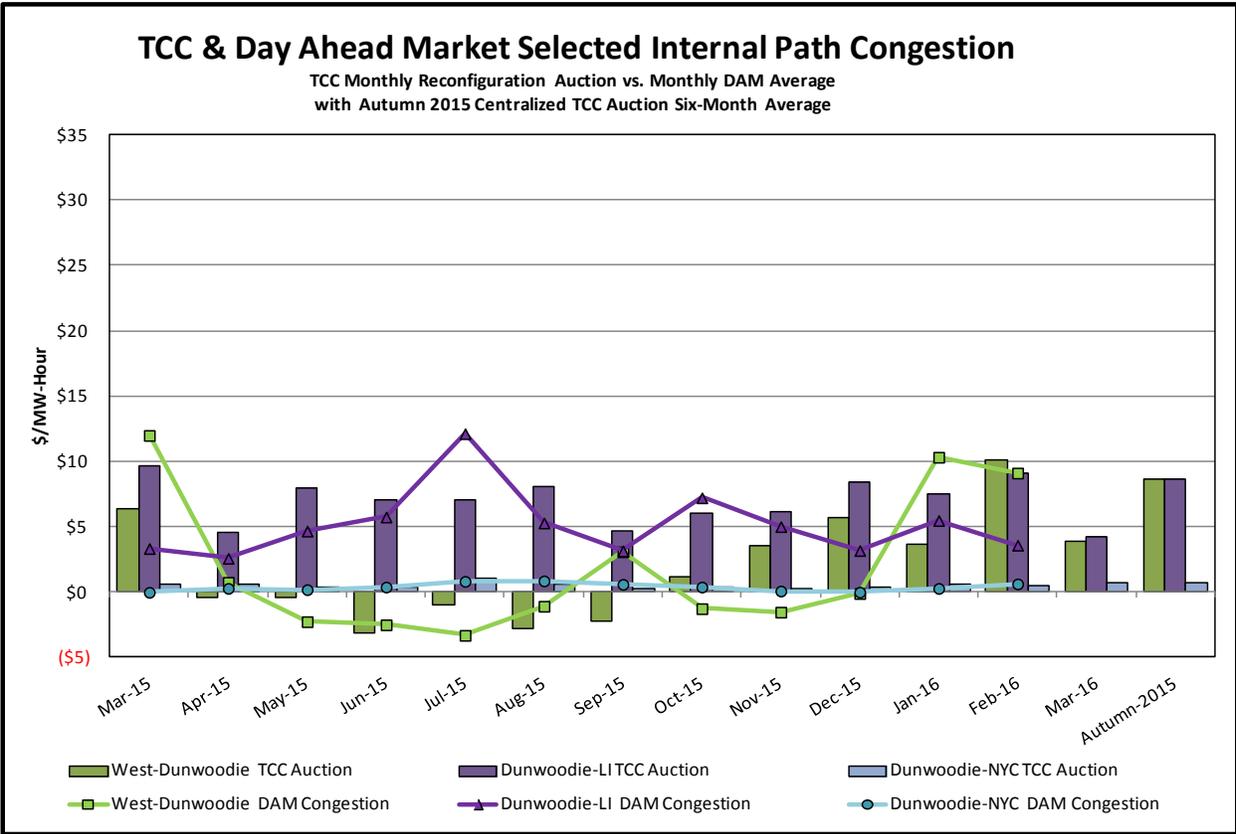
Day-Ahead Market Congestion Residual Categories

<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.	









TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Autumn 2015 Centralized TCC Auction Six-Month Average

