

Operations Performance Metrics Monthly Report



August 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 September 9, 2016.

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August 2016 Operations Performance Highlights

- Peak load of 32,076 MW occurred on 08/11/2016 HB 16
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- EDRP/SCR resources activated statewide for 8/12 for HB13:00 through 18:00
- 25 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- An IESO to NYISO ICAP Memorandum of Understanding was agreed to by the NYISO and IESO regarding the import of External Capacity from Ontario beginning with the Winter 2016-2017 capability period.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

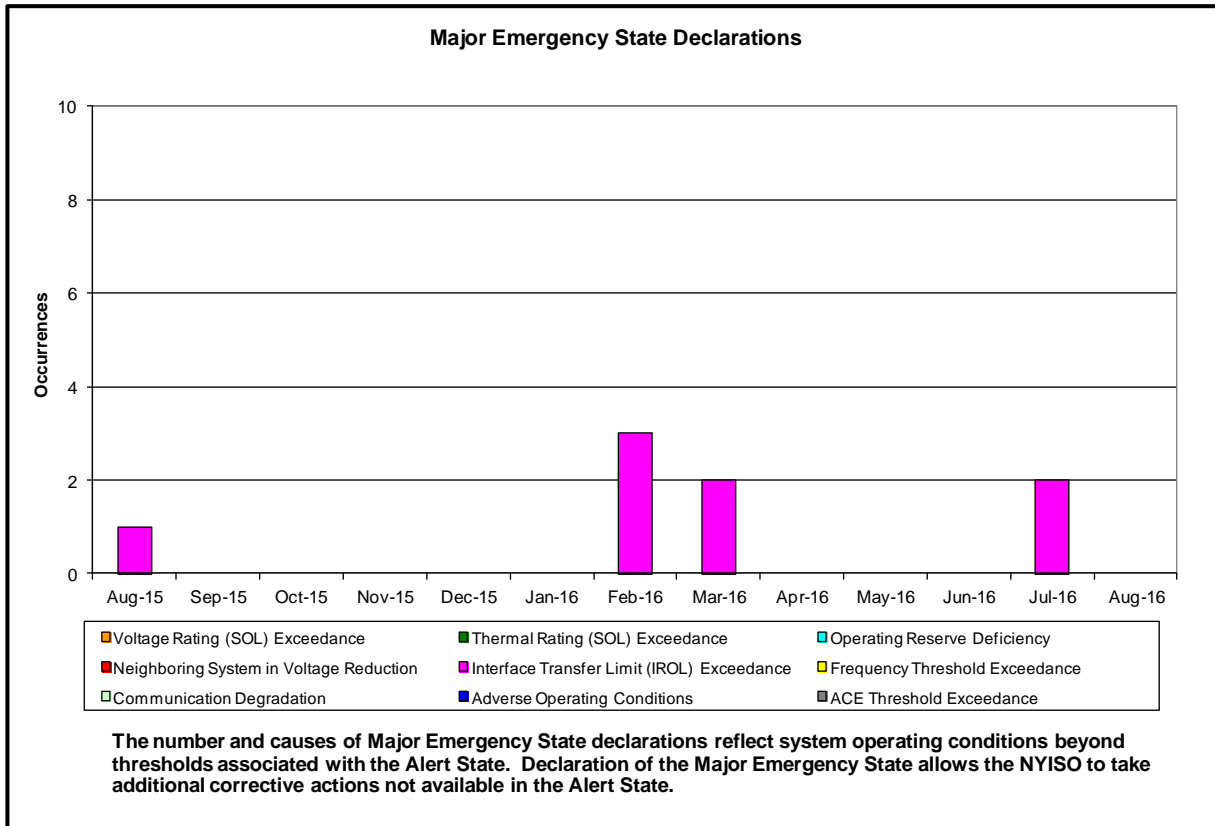
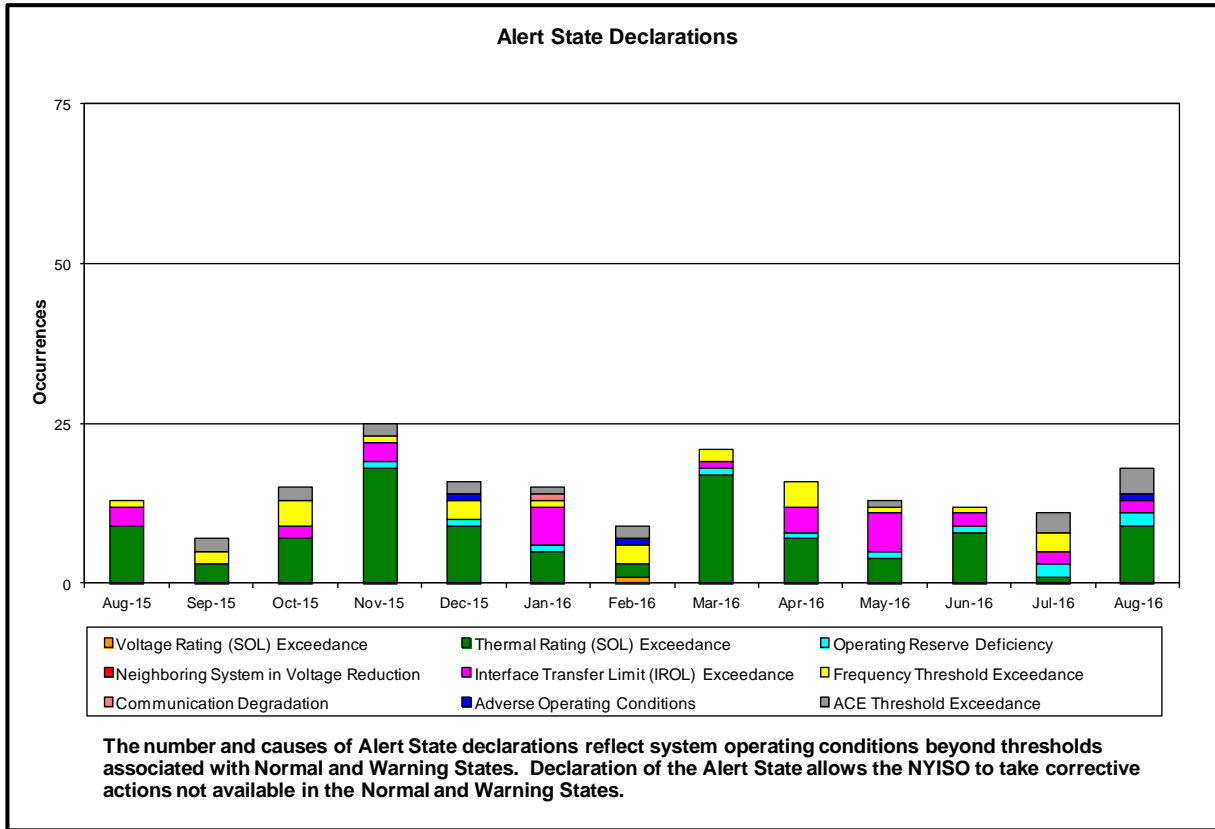
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$1.19	\$16.26
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.37)	(\$0.47)
NY Savings from NE-NY Coordinated Transaction Scheduling	(\$0.10)	(\$1.38)
Total NY Savings	\$0.72	\$14.41
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.38	\$1.77
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.31	\$1.33
Total Regional Savings	\$0.69	\$3.10

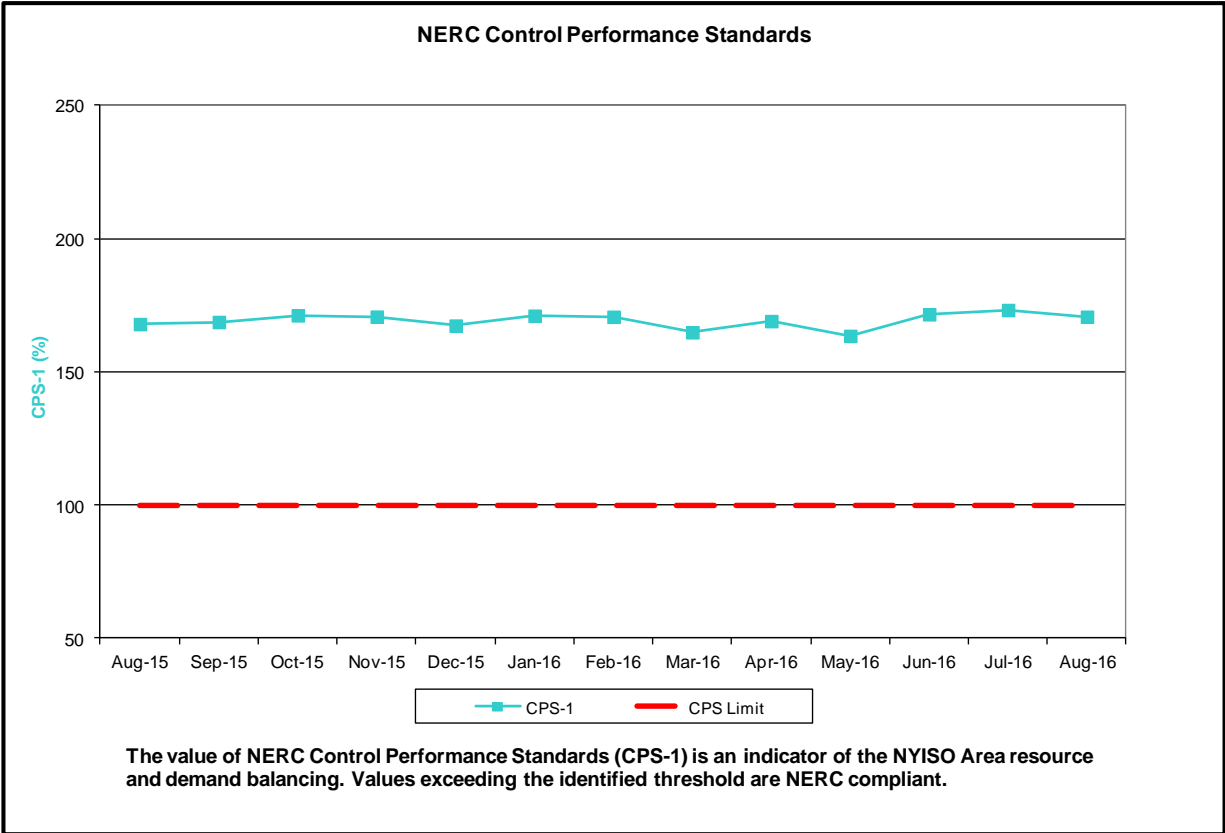
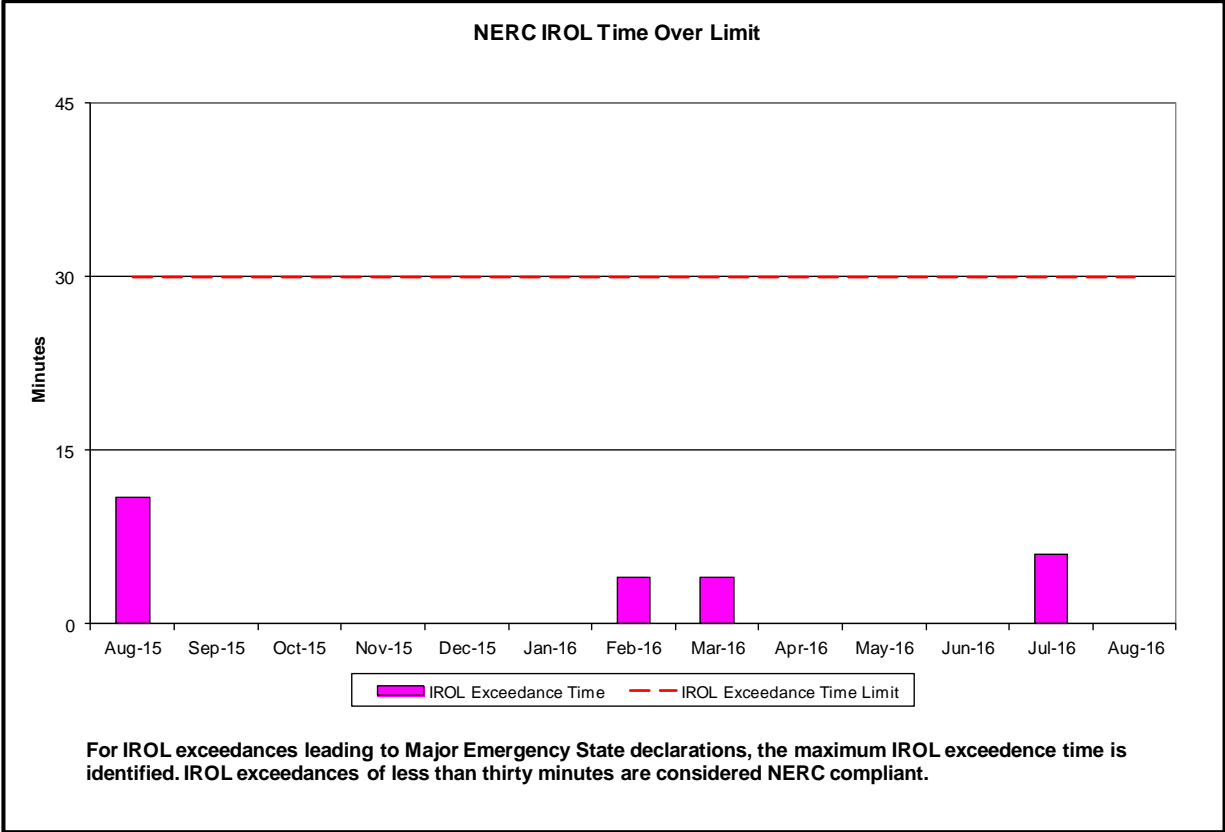
- Statewide uplift cost monthly average was (\$0.86)/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and the price delta.

Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
September 2016 Spot Price	\$3.32	\$9.15	\$12.19	\$4.46
August 2016 Spot Price	\$3.64	\$9.23	\$12.21	\$4.42
Delta	(\$0.32)	(\$0.08)	(\$0.02)	\$0.04

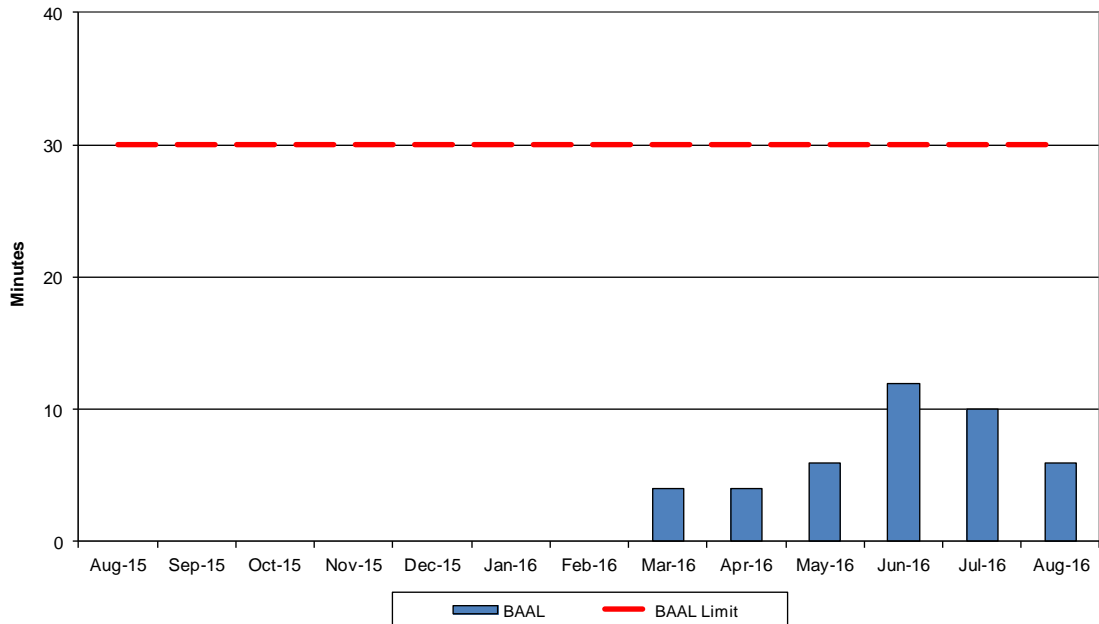
- NYCA - Price decreases by \$0.32 due to an increase in Net Imports

- Reliability Performance Metrics



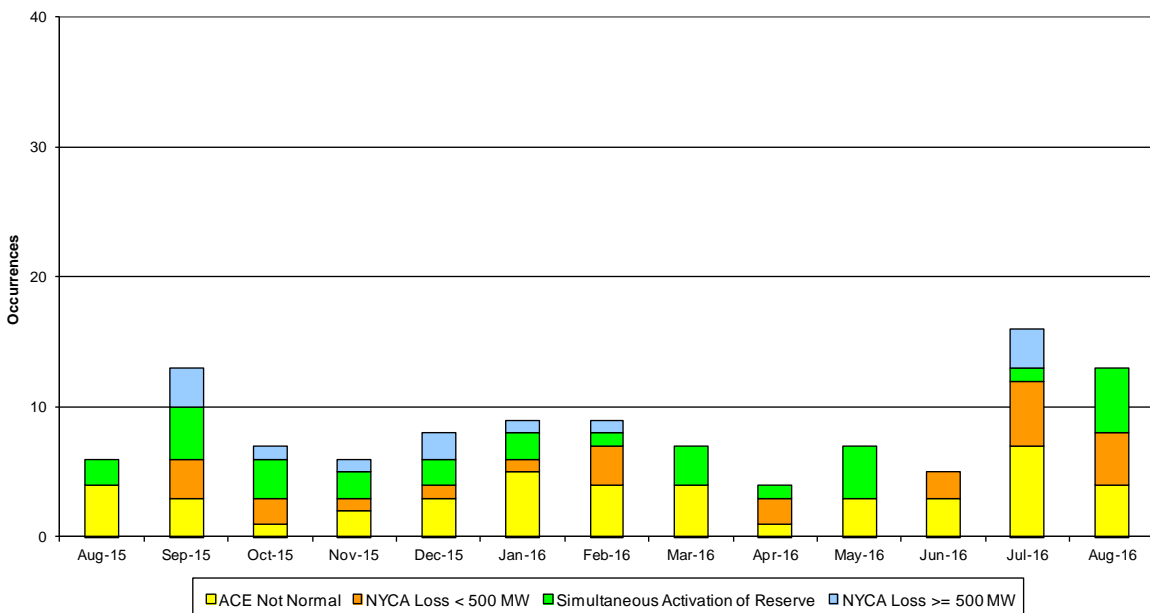


NERC Balancing Authority ACE Limit Standard

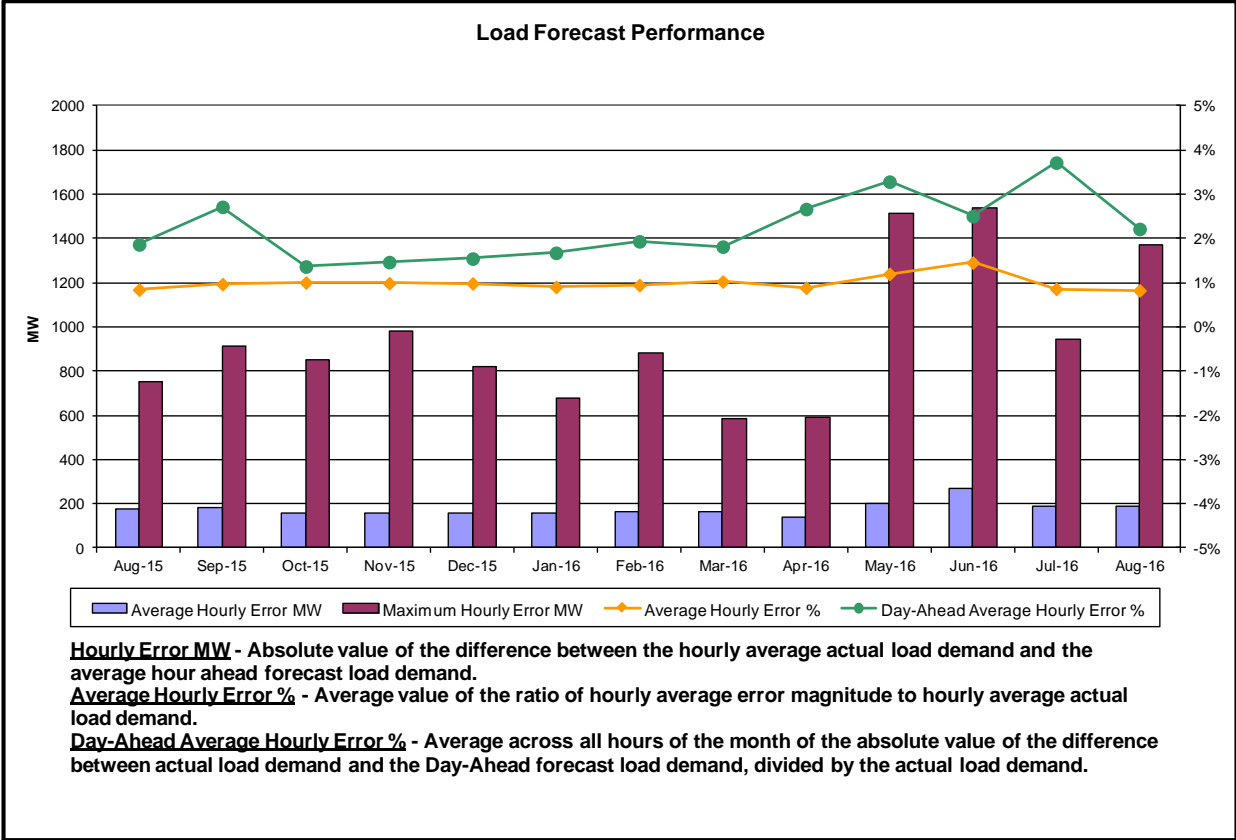
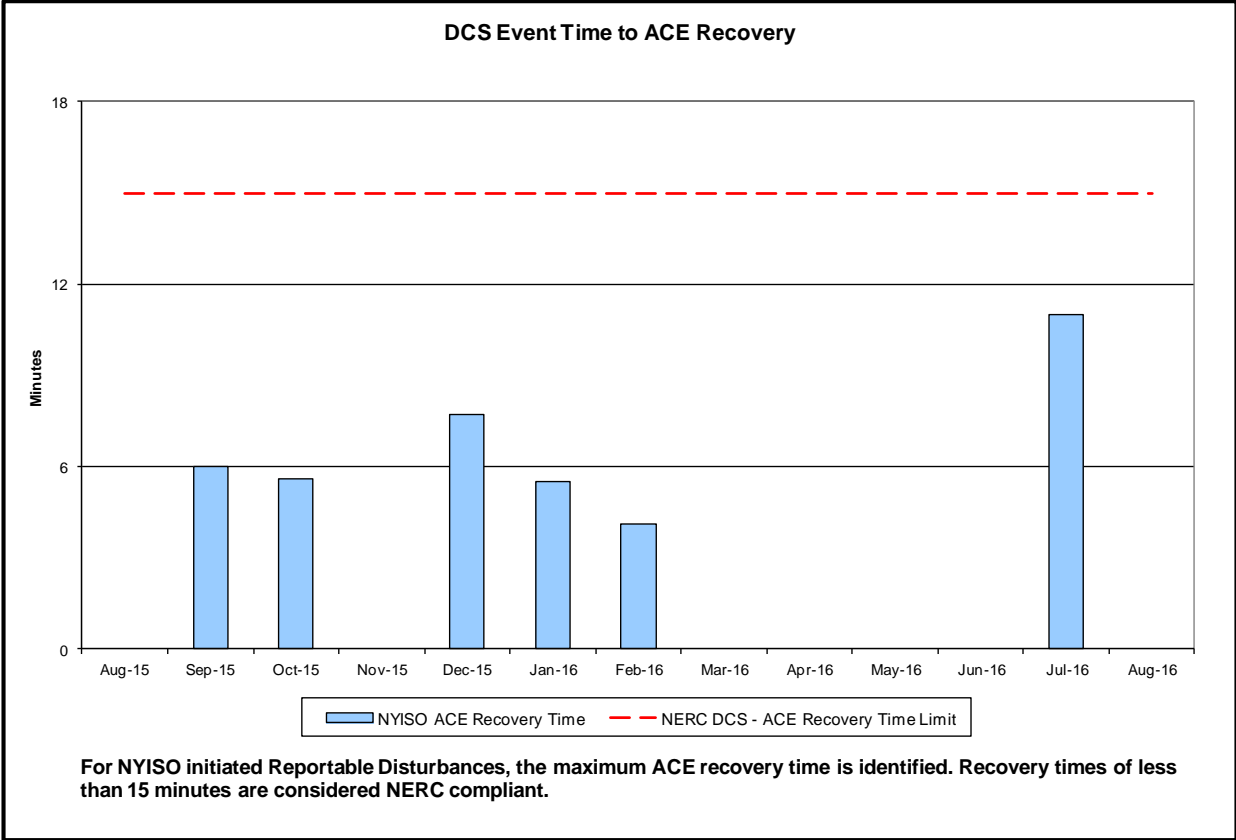


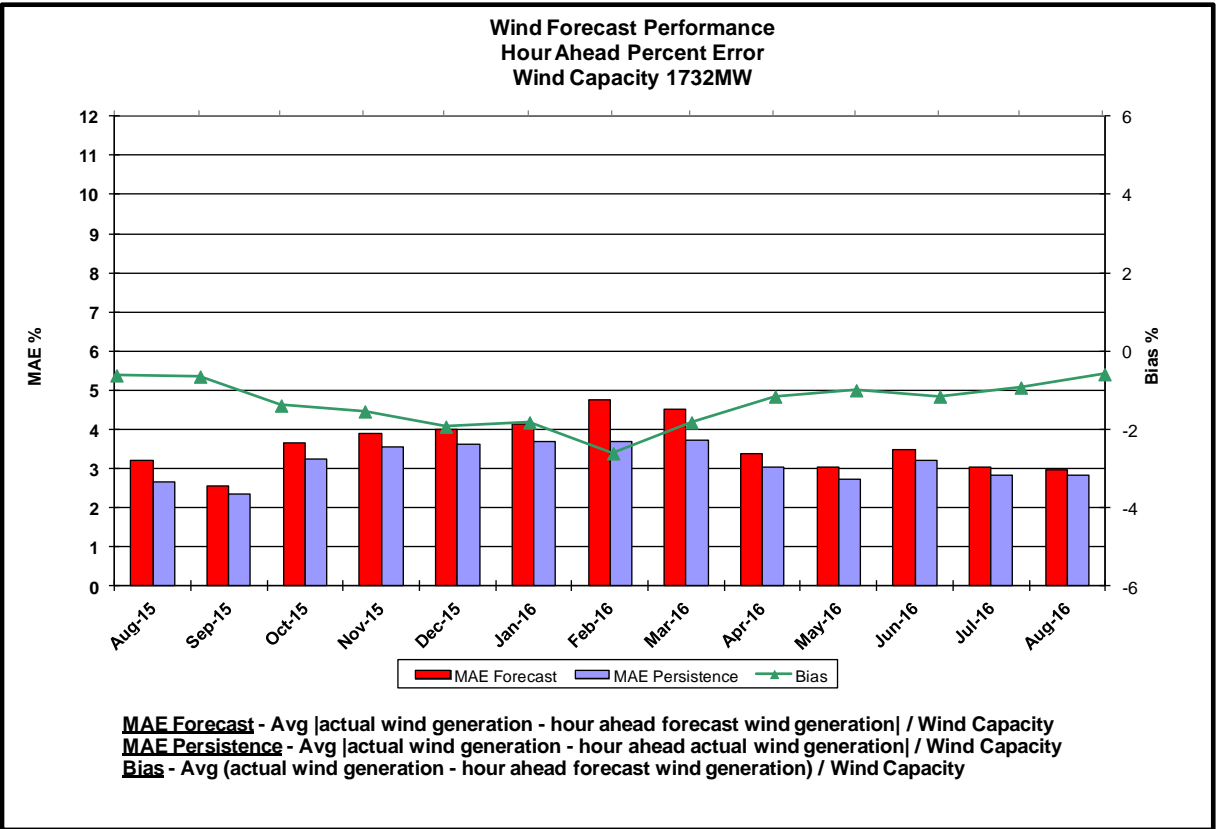
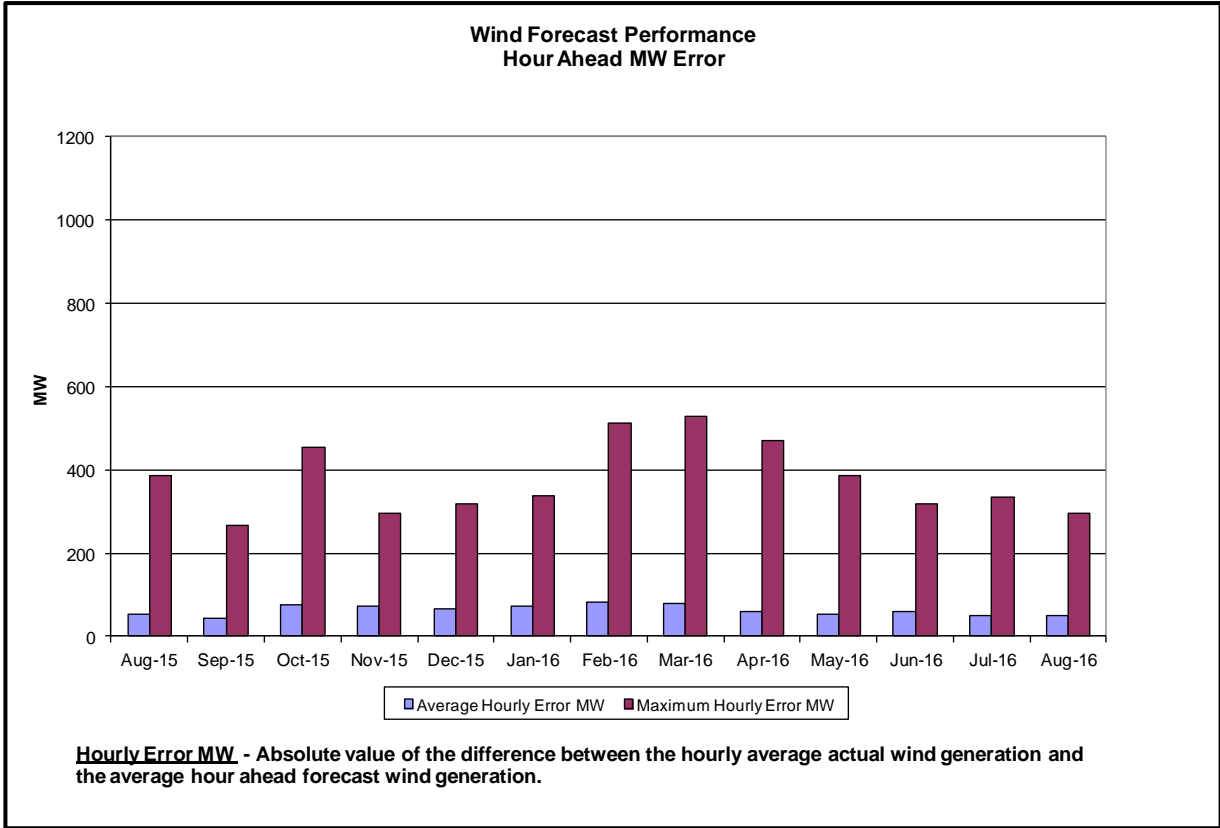
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

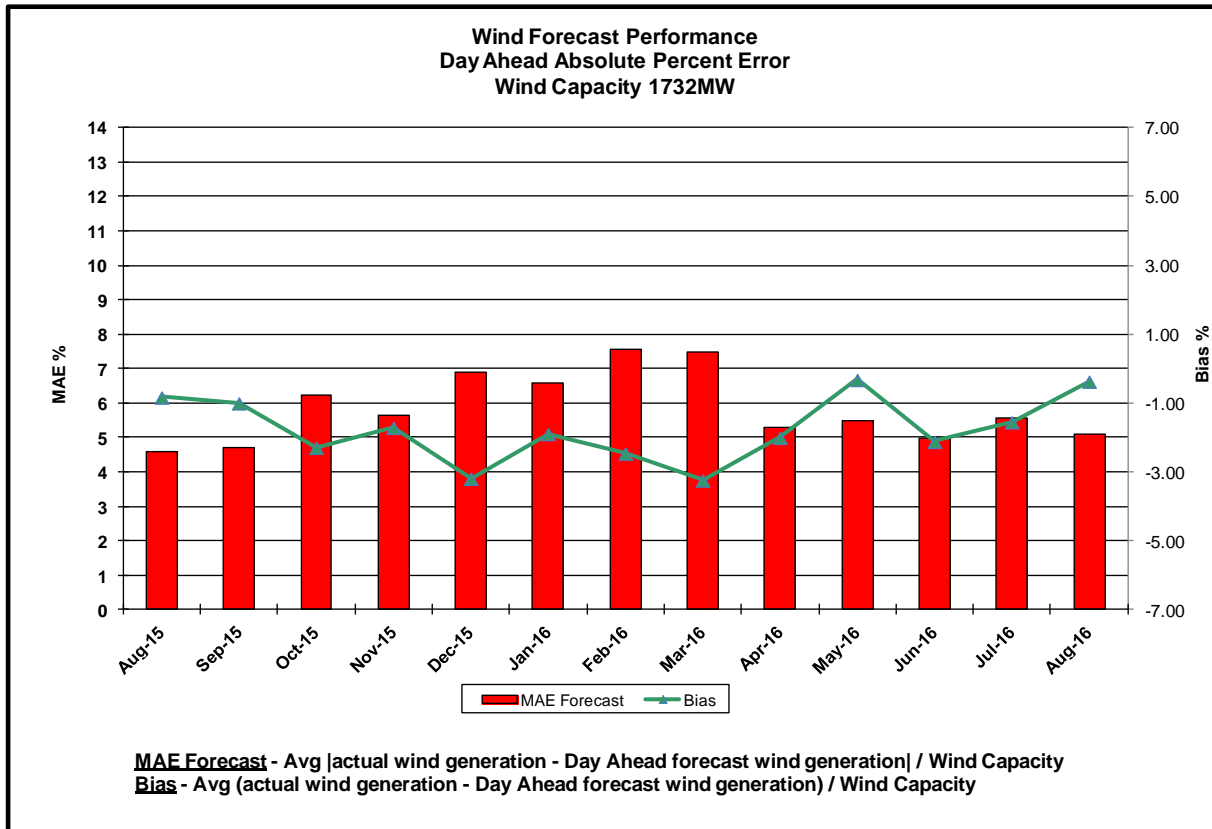
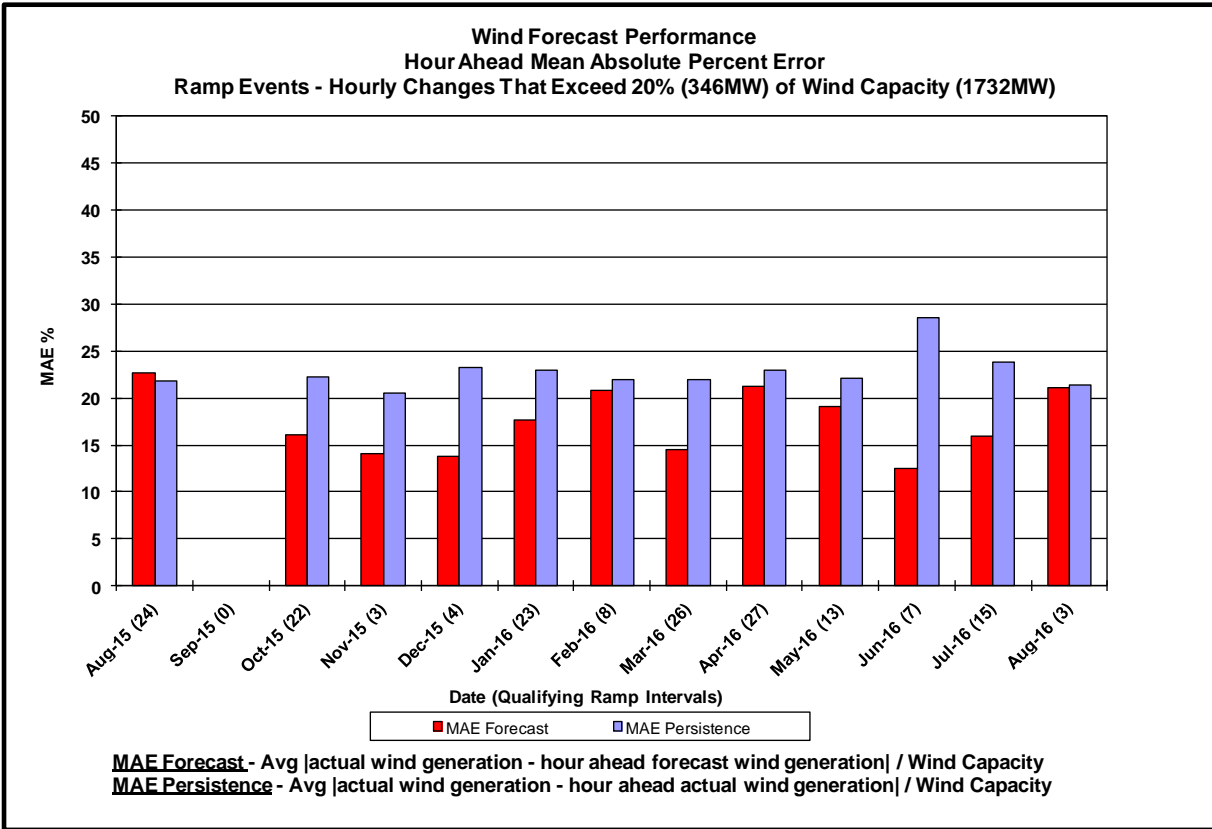
Reserve Activations

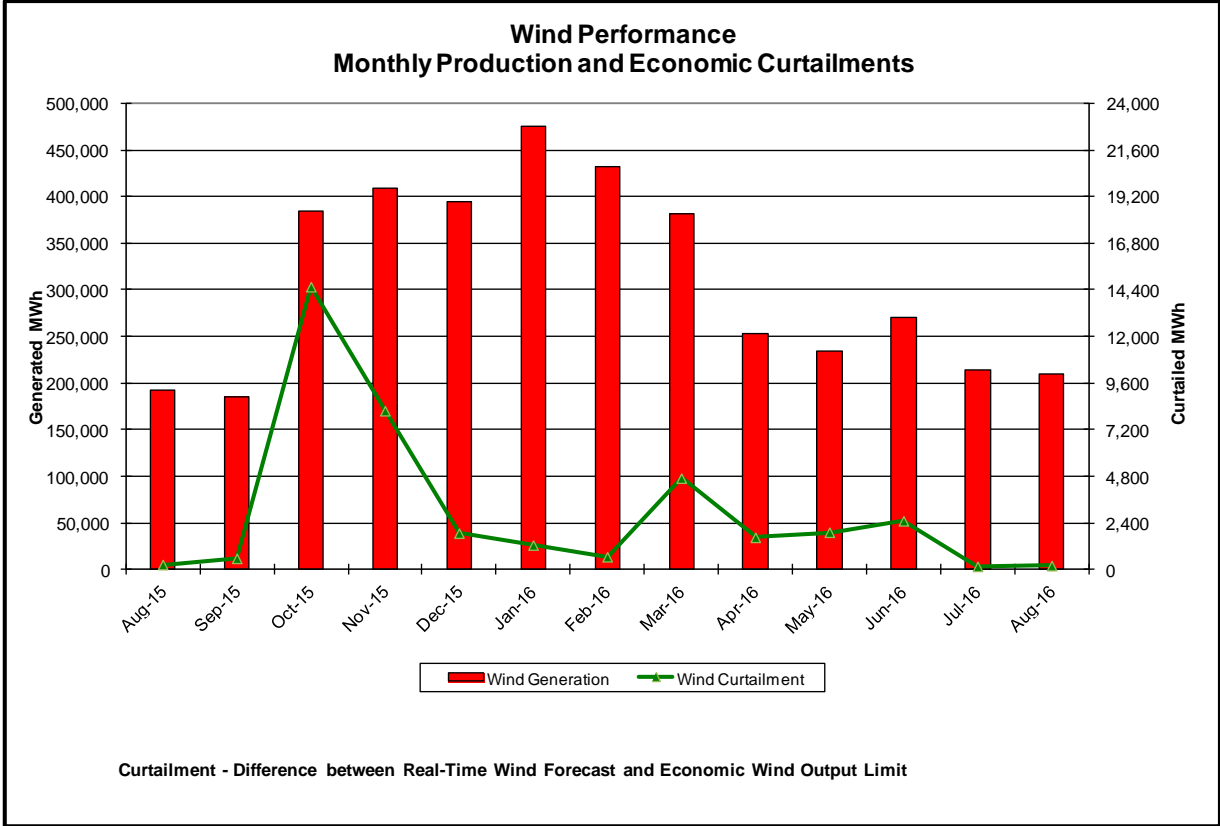


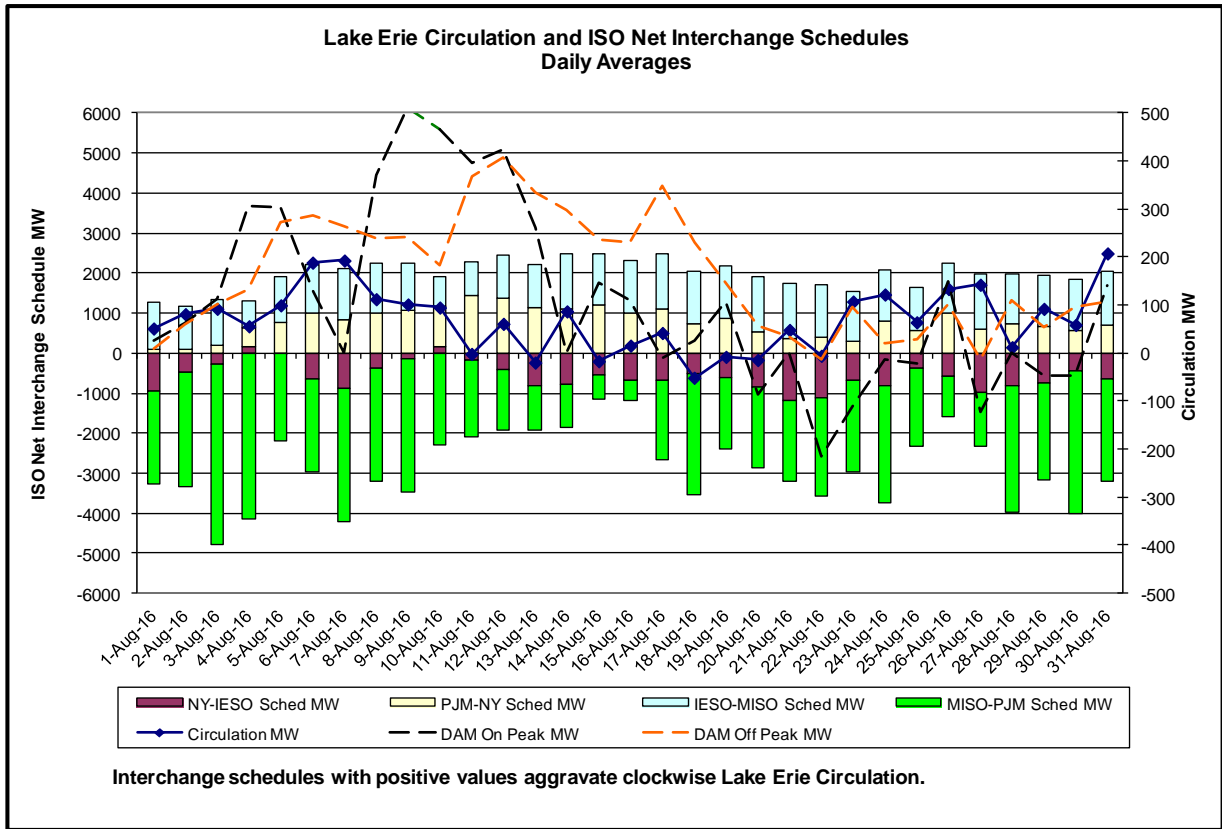
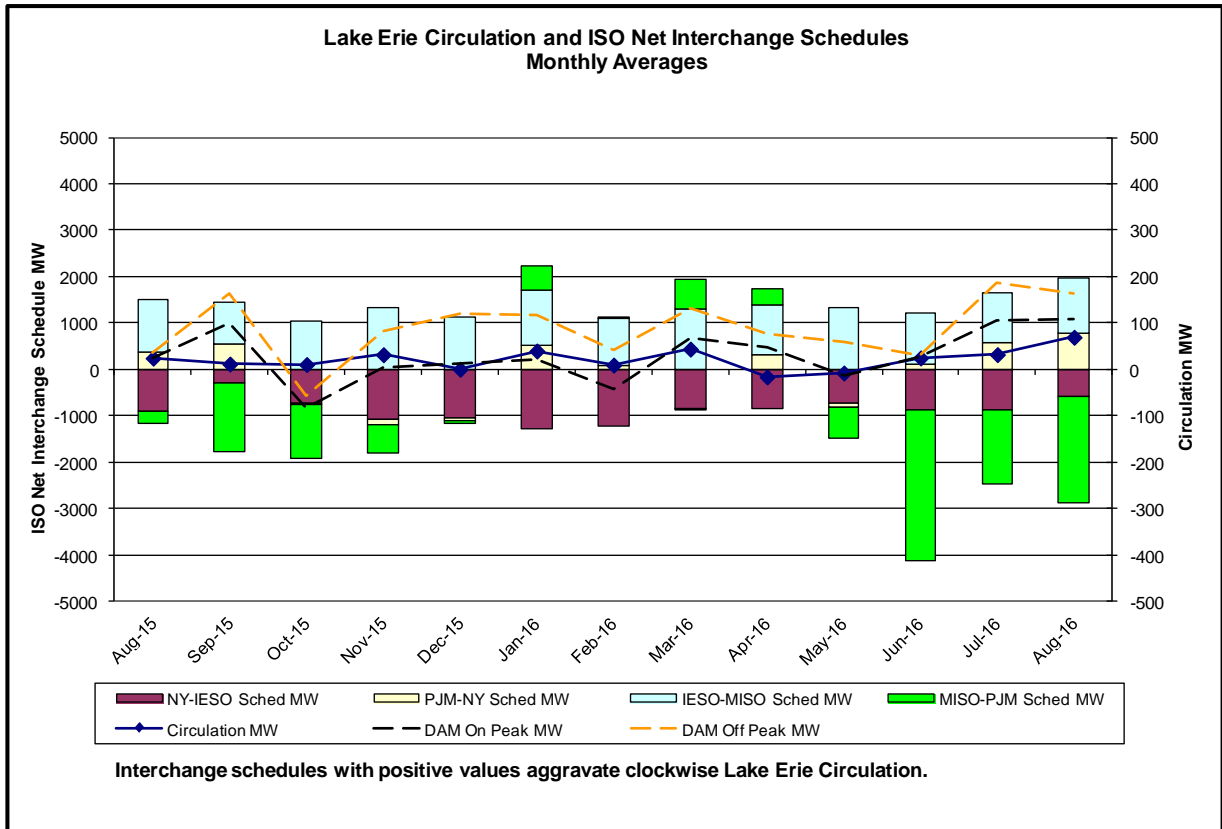
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.



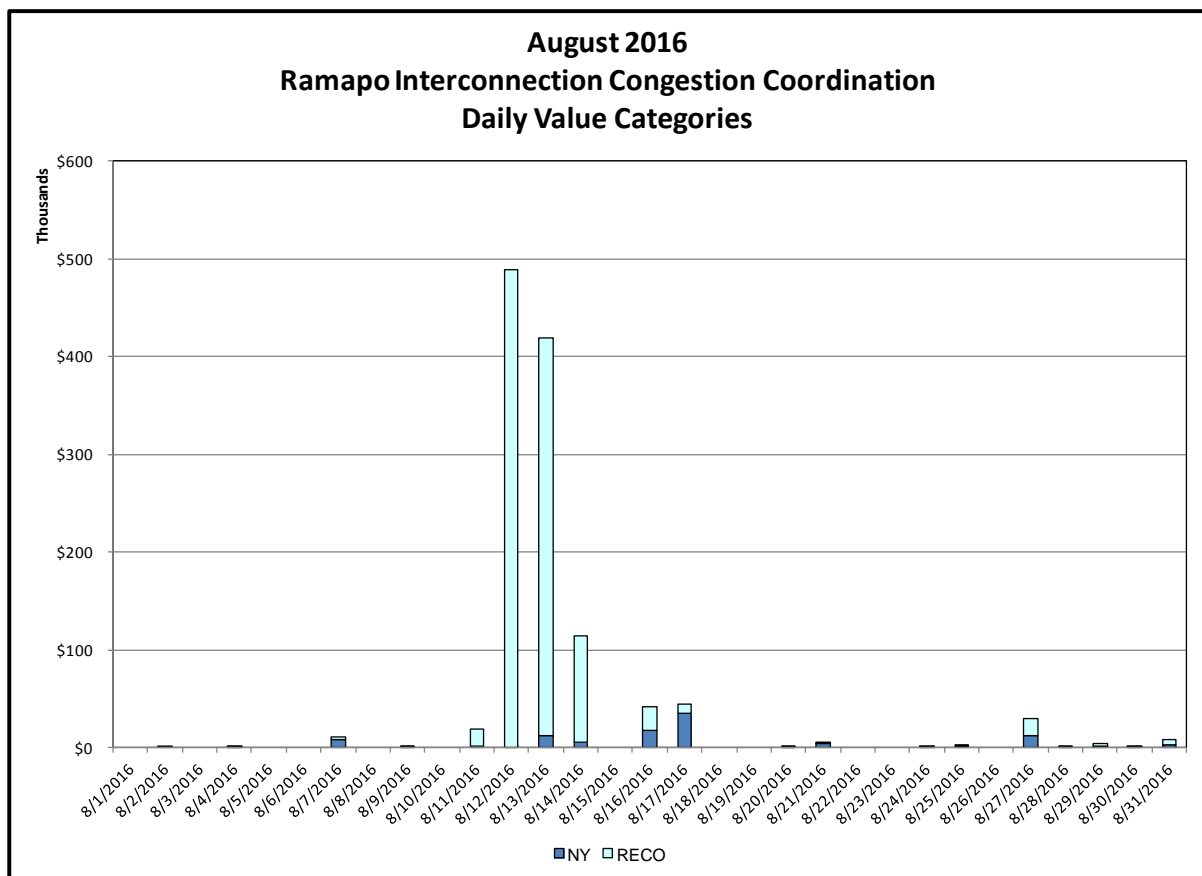
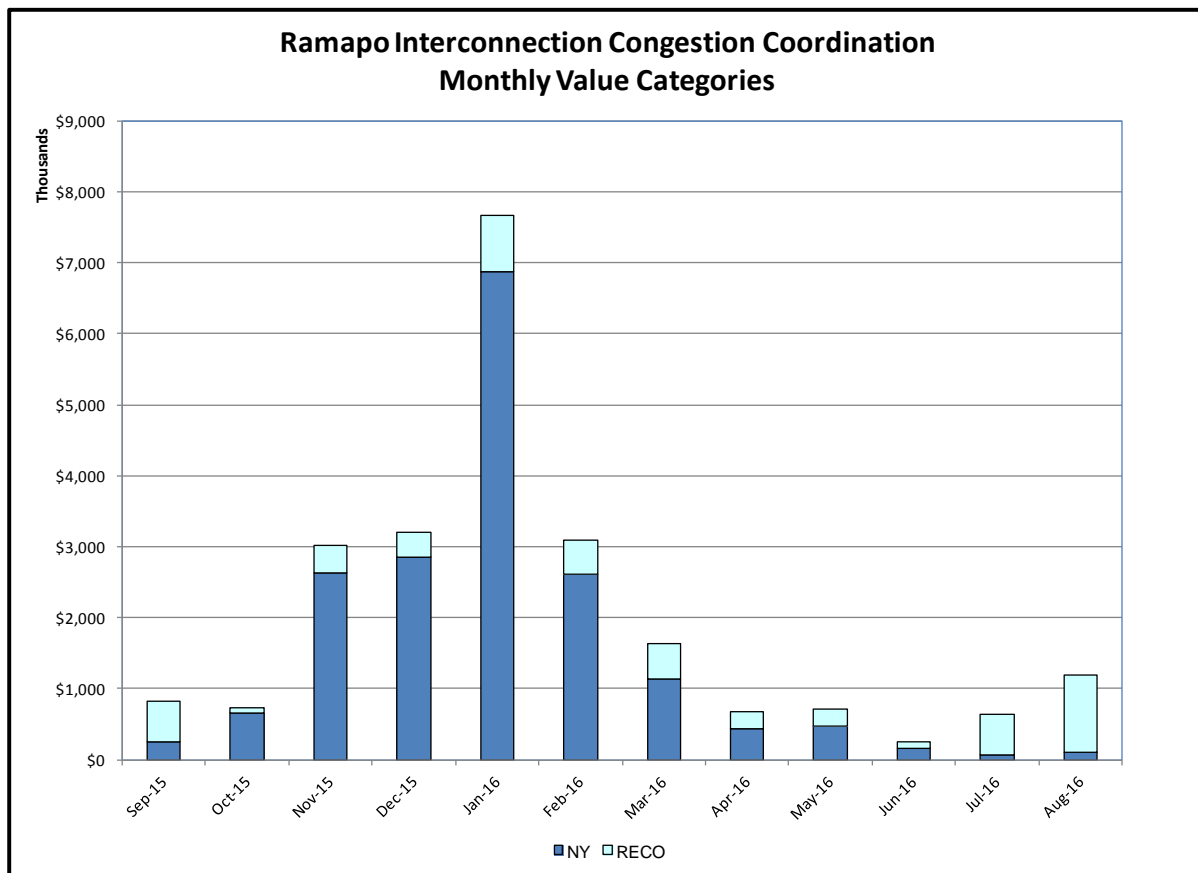






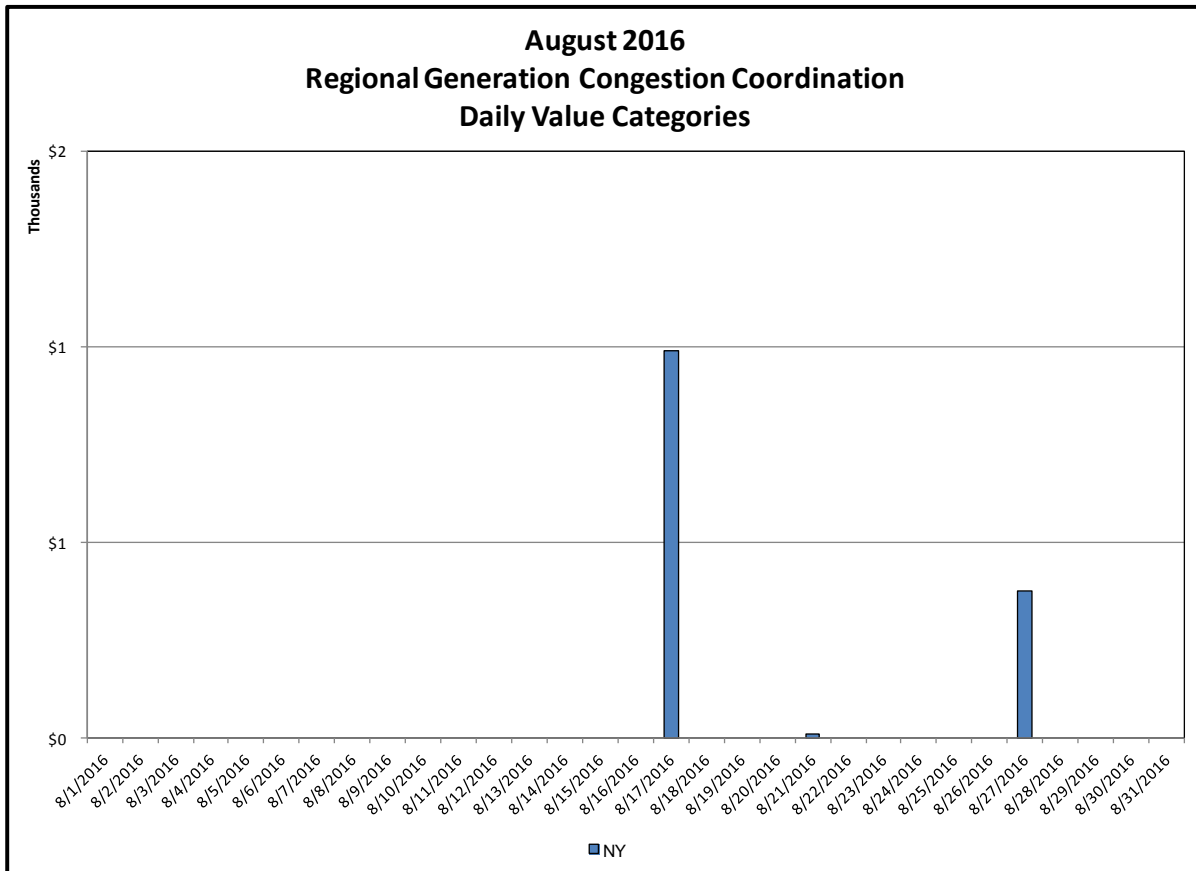
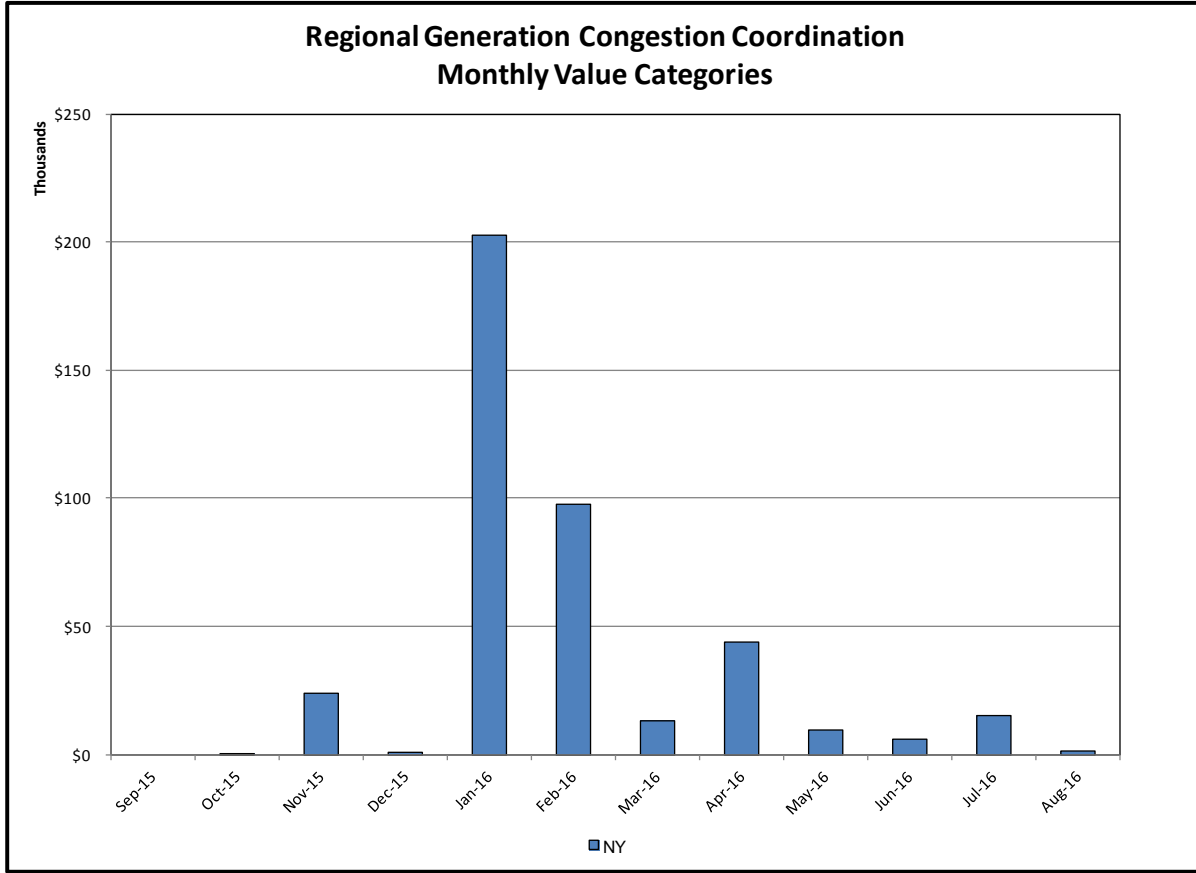


Broader Regional Market Performance Metrics



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.



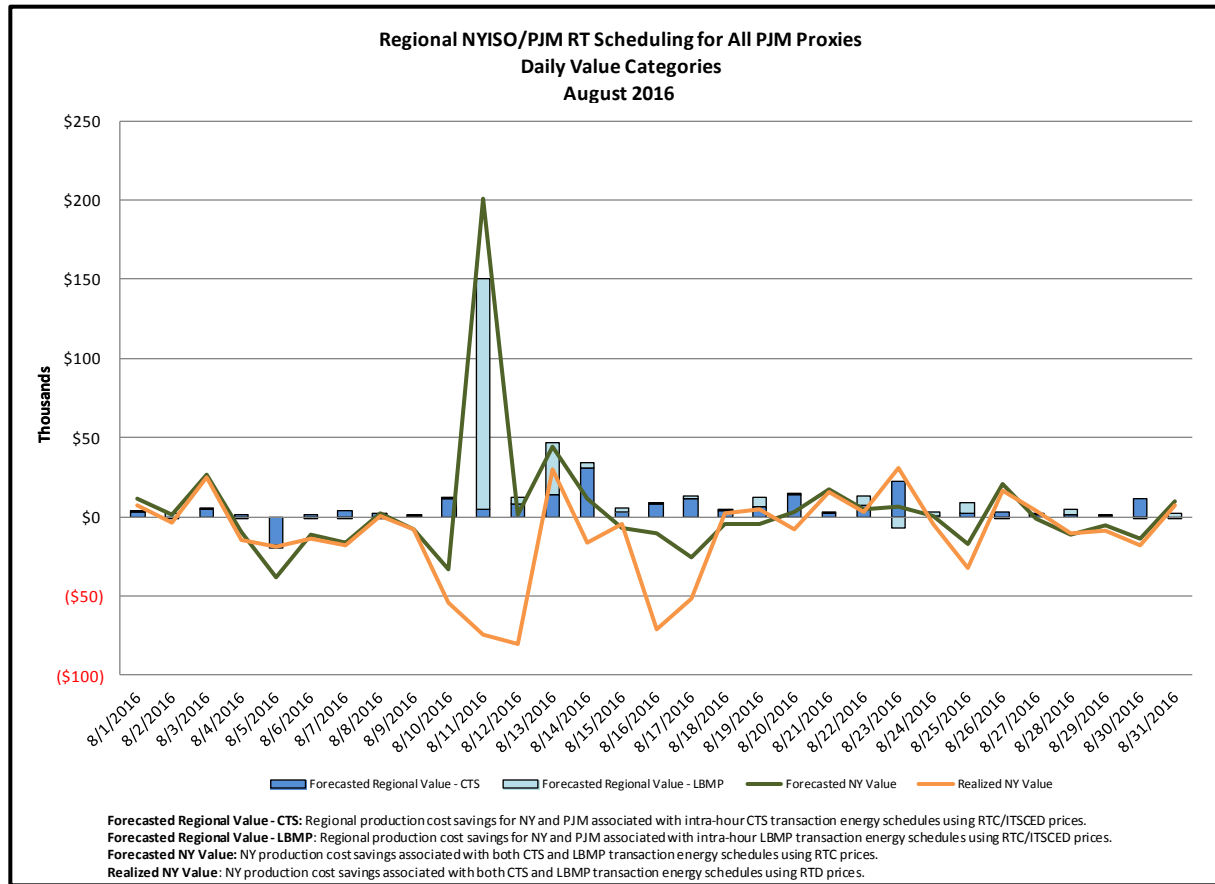
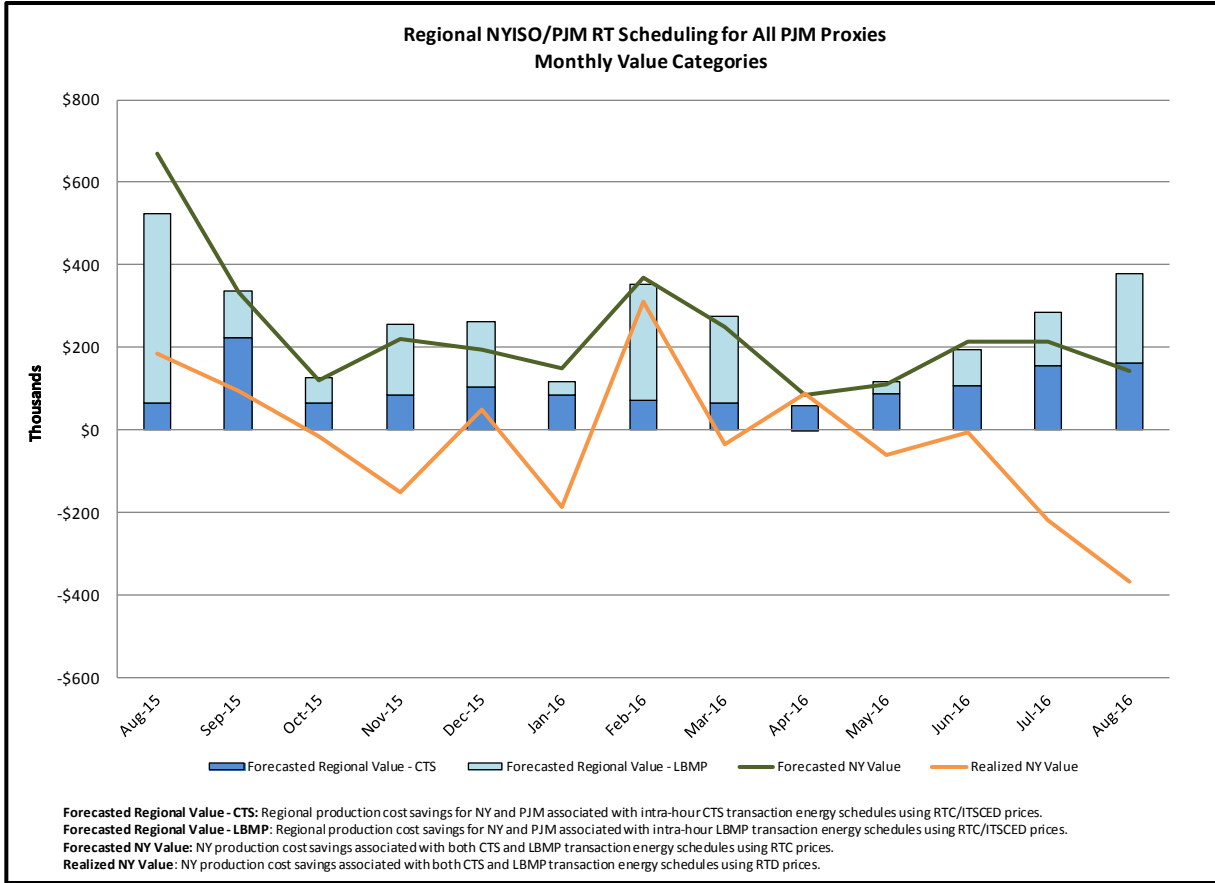
Regional Generation Congestion Coordination

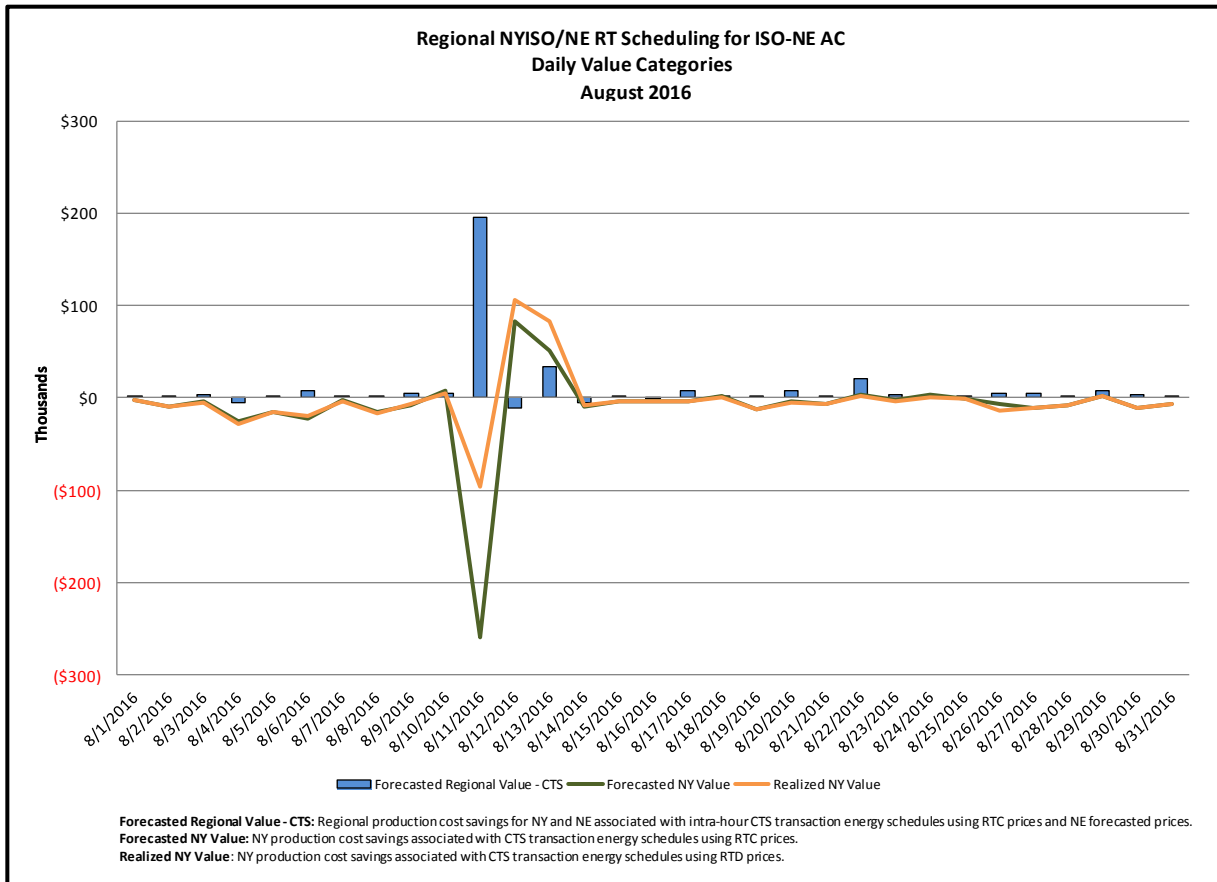
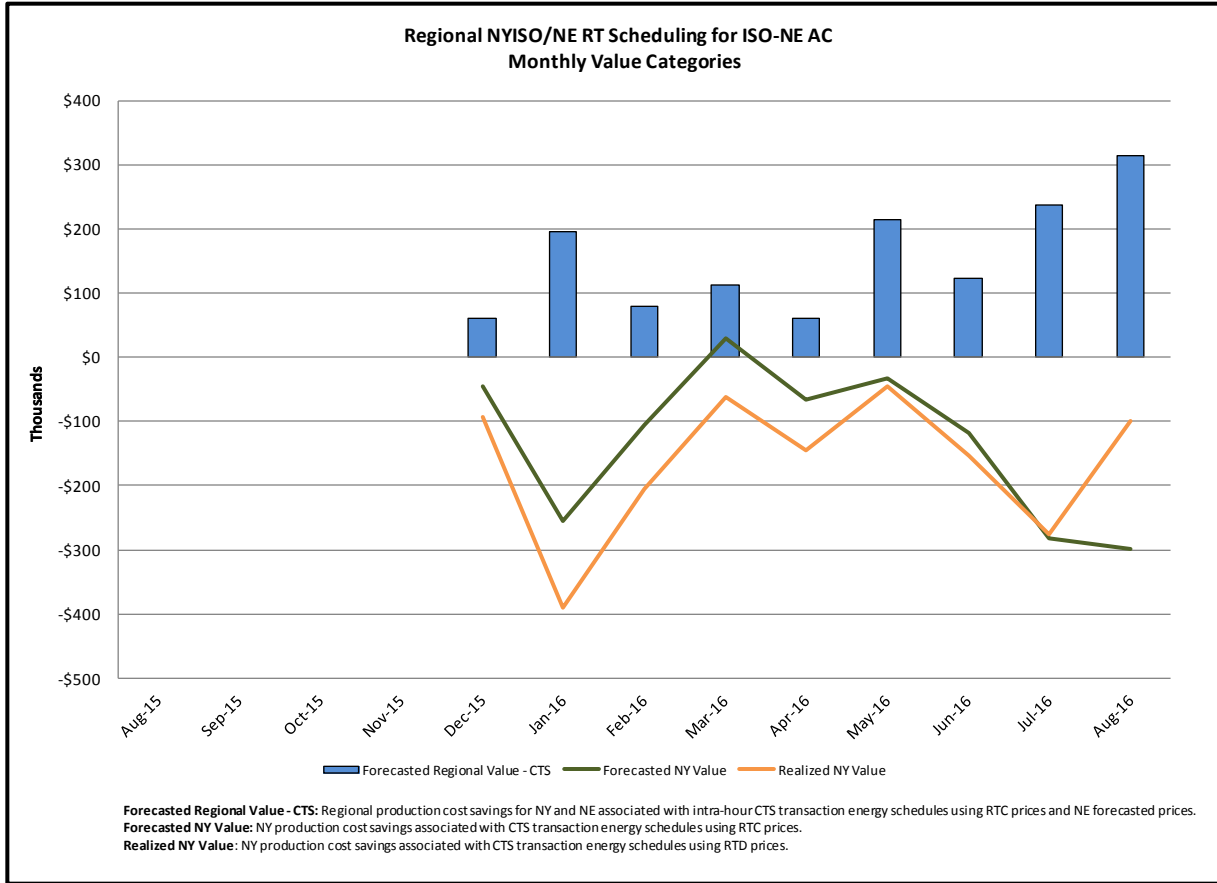
Category

NY

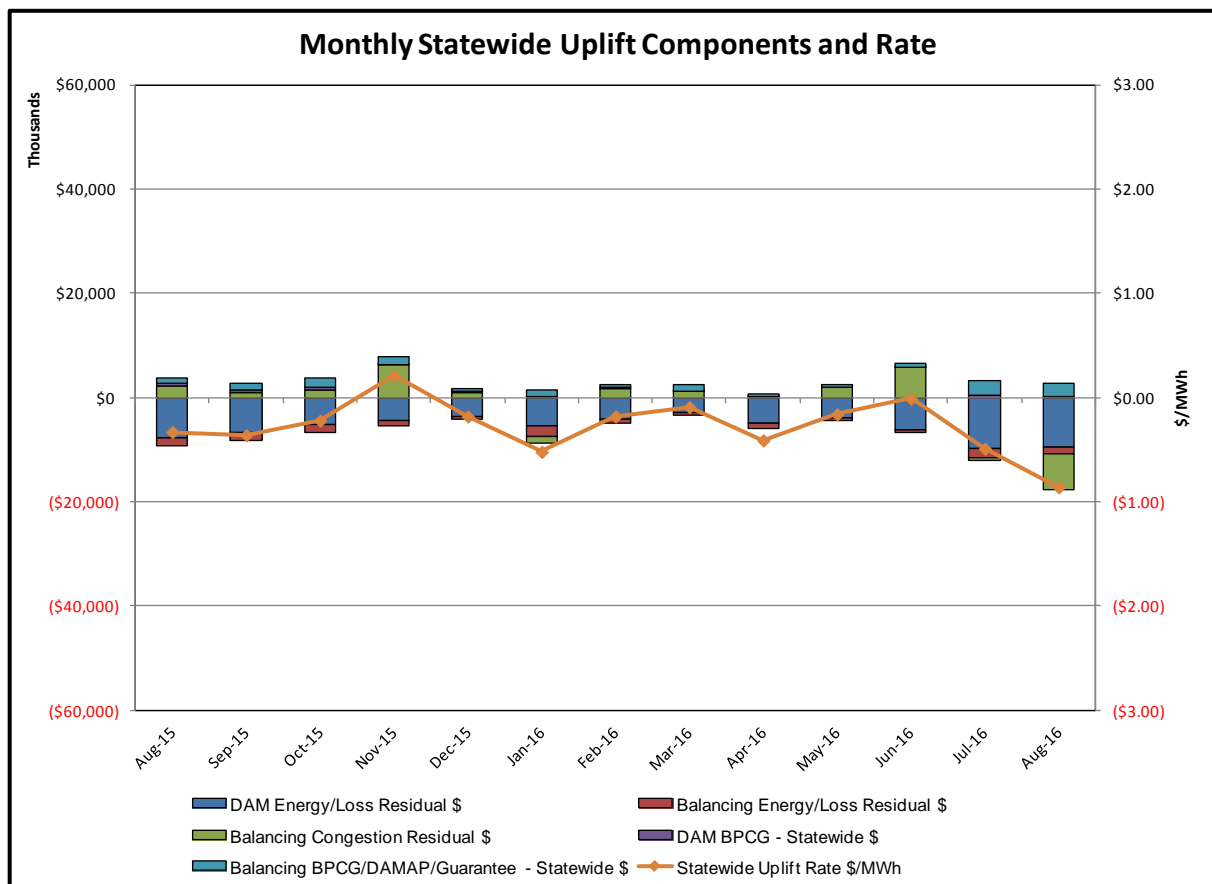
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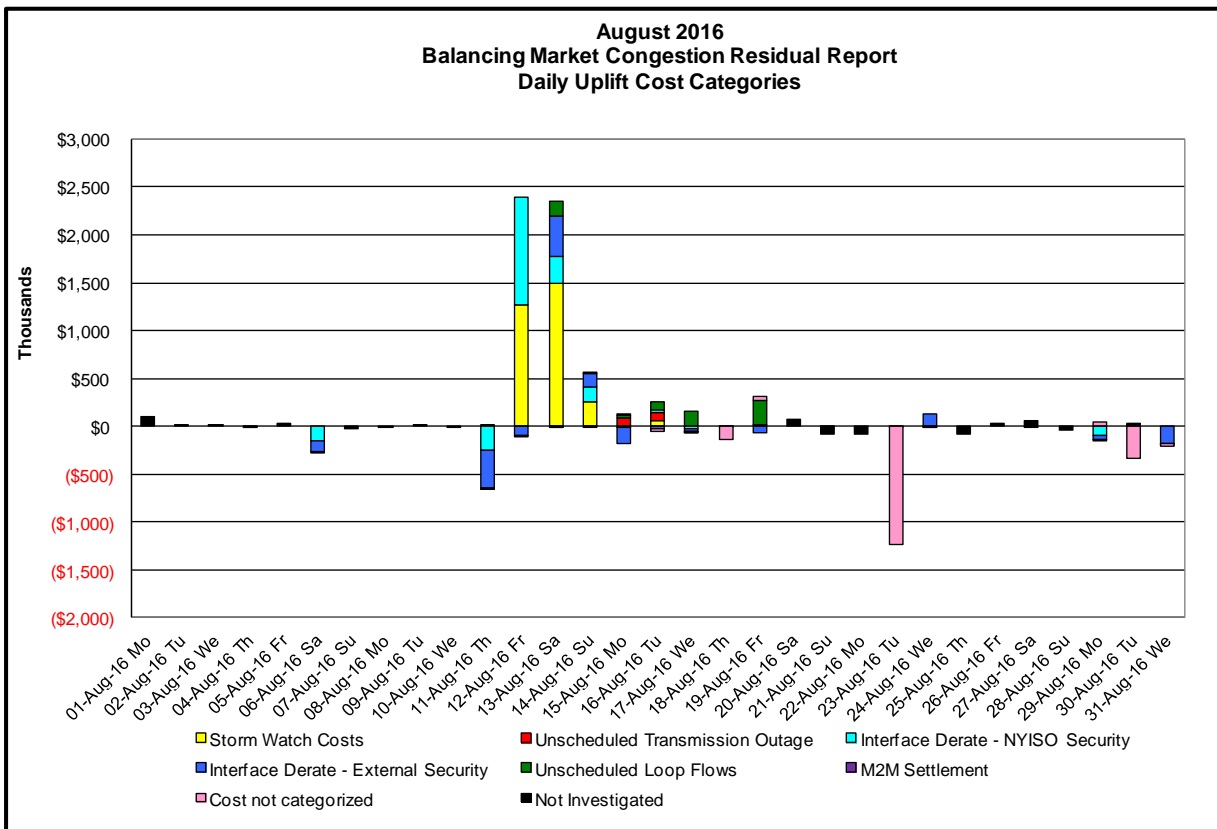
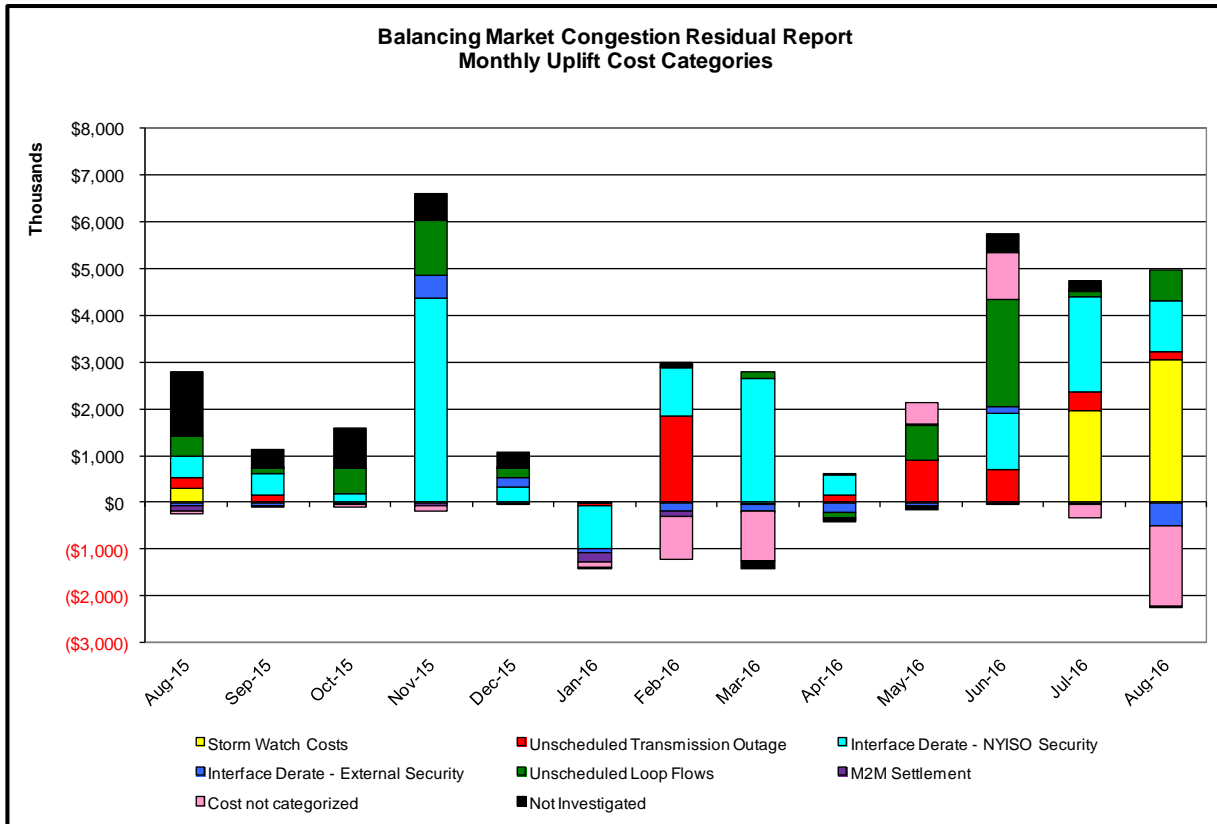
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





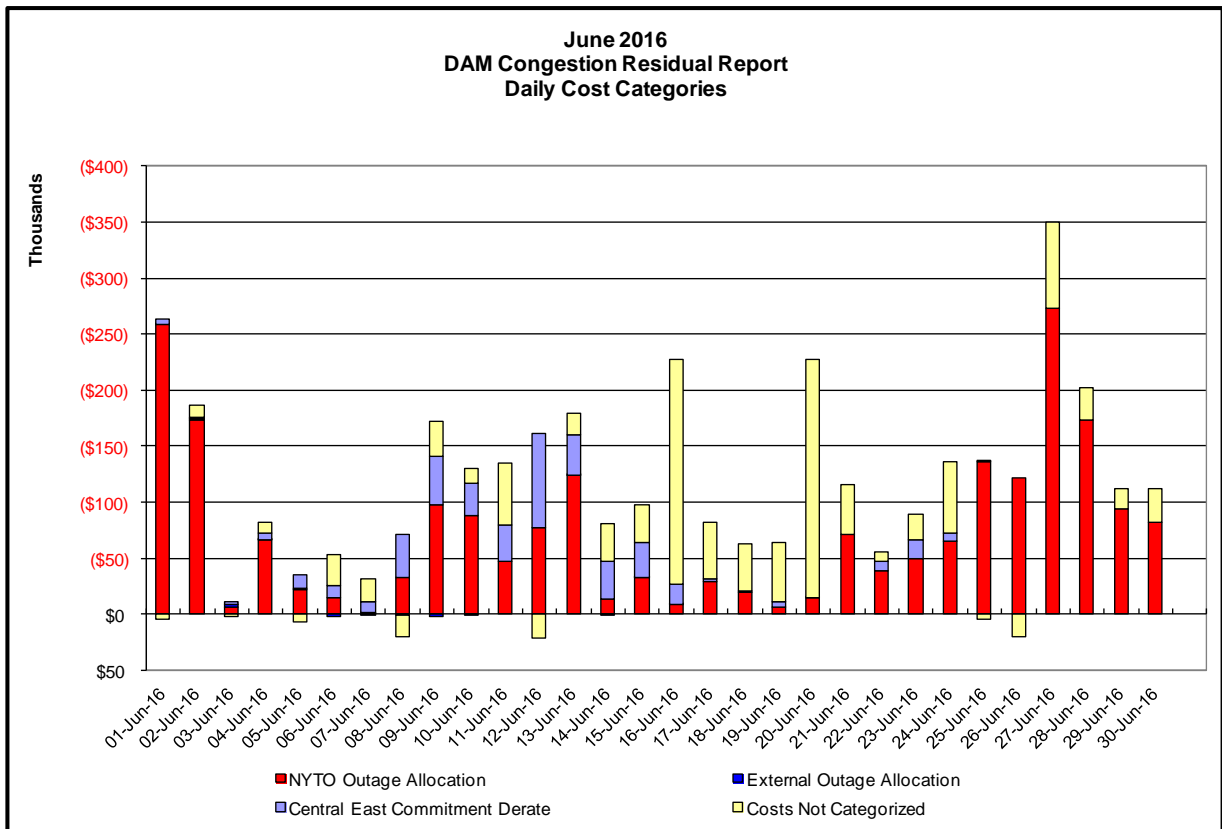
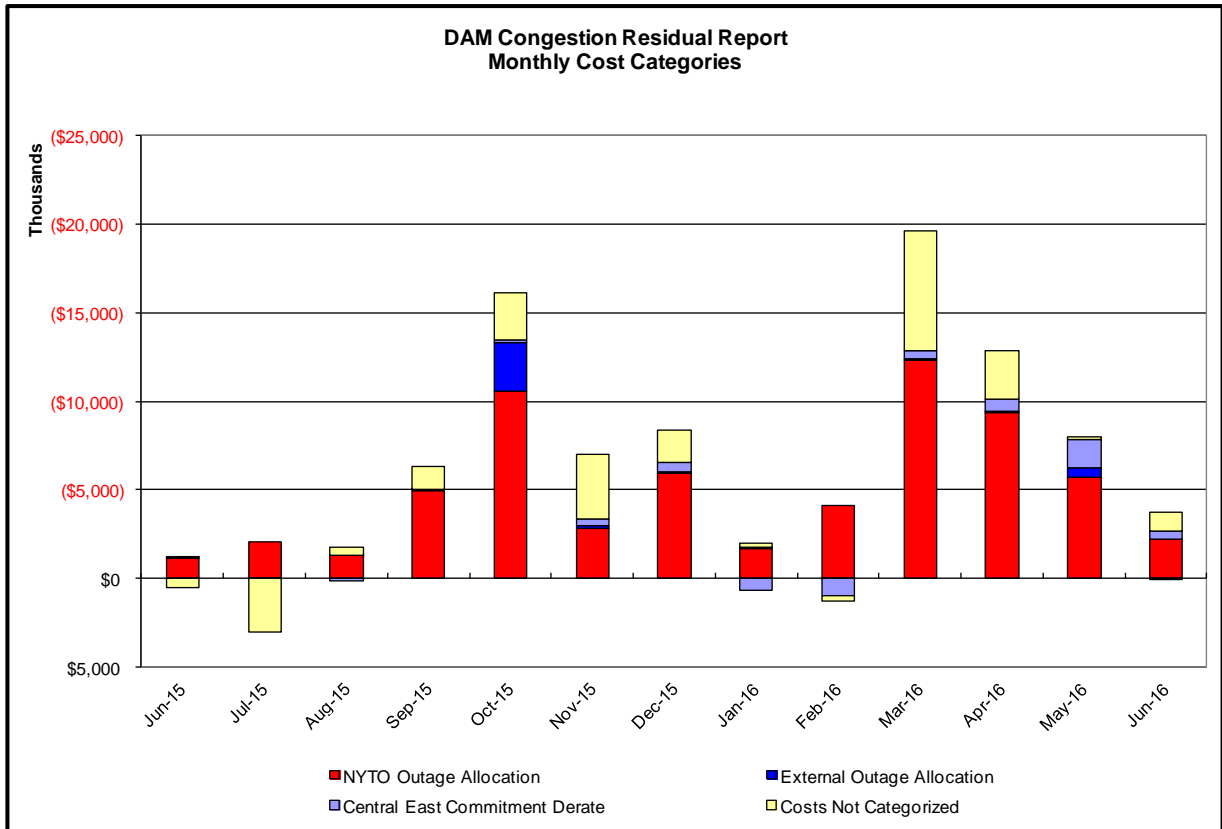
Event	Description	August Dates
	Thunder Storm Alert	11,12-14,16
	Forced outage Niagara-Packard 115kV (#192)	15,16
	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o NEPTUNE HVDC TIE LINE	12-17,19,24
	Derate East 179th Street-HellGate East 138kV (#15053/15054)	13
	Derate East 179th Street-HellGate East 138kV (#15054)	16
	Derate East 179th Street-HellGate West 138kV (#15055)	14
	Derate Gowanus-Greenwood 138kV (#42231)	13,14,16
	Derate Gowanus-Greenwood 138kV (#42231) for I/o SCB:GOWANUS(14):42&42232&R14	13,14
	Derate Gowanus-Greenwood 138kV (#42232)	13
	Derate Gowanus-Greenwood 138kV (#42232) for I/o SCB:GOWANUS(2):41&42231&R4	13,14
	Derate Gowanus-Greenwood 138kV (#42232) for I/o TWR:GOETHALS 22 & 21	13
	Derate Greenwood-Vernon 138kV (#31231) for I/o TWR:GOETHALS 22 & 21	14
	Derate Northport-Pilgrim 138kV (#677) for I/o BUS:NRTHPRT 672&679&1385&G1&IC	15
	Derate Packard-Sawyer 230kV (#77) for I/o Packard-Sawyer 230kV (#78)	30
	NYCA DNI Ramp Limit	11-14,16,17,24,29
	Uprate Athens-Pleasant Valley 345kV (#91) for I/o Leeds-Pleasant Valley 345kV (#92)	14
	Uprate Central East	17
	Uprate East 179th Street-HellGate West 138kV (#15055)	17,19,29
	Uprate Freshkills 345/138kV (#BK TA1)	14-16
	Uprate Freshkills-Willowbrook 138kV (#29211)	24
	Uprate Freshkills-Willowbrook 138kV (#29212)	6,12,14-17
	Uprate Goethals-Gowanus 345kV (#25)	12,14-16,18,24,29
	Uprate Goethals-Gowanus 345kV (#26)	11,12,14-16,24,29
	Uprate Gowanus-Greenwood 138kV (#42231)	15-17
	Uprate Gowanus-Greenwood 138kV (#42231) for I/o SCB:GOWANUS(14):42&42232&R14	15,16
	Uprate Gowanus-Greenwood 138kV (#42231) for I/o TWR:GOETHALS 22 & 21	17
	Uprate Gowanus-Greenwood 138kV (#42231/42232) for I/o TWR:GOETHALS 22 & 21	16
	Uprate Gowanus-Greenwood 138kV (#42232)	15,17
	Uprate Gowanus-Greenwood 138kV (#42232) for I/o SCB:GOWANUS(2):41&42231&R4	15-17
	Uprate Gowanus-Greenwood 138kV (#42232) for I/o TWR:GOETHALS 22 & 21	17
	Uprate Leeds-Pleasant Valley 345kV (#92) for I/o Athens-Pleasant Valley 345kV (#91)	14,29
	HQ_CHAT-NY DNI Ramp Limit	24
	HQ_CHAT-NY Scheduling Limit	12,24,31
	IESO_AC DNI Ramp Limit	11,15
	IESO_AC-NY Scheduling Limit	12
	NE_AC DNI Ramp Limit	11-14,16,17,19,23,24,29
	NE_AC-NY Scheduling Limit	6,11,12,14-17
	NE_NNC1385-NY Scheduling Limit	11,13-15,29
	PJM_AC DNI Ramp Limit	16,17
	PJM_AC-NY Scheduling Limit	11,13,14,24
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Gardenville-Stolle Road 230kV (#66)	16,19
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61)	13,15-17,19
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kV (#77)	13,15-17,30

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 Lake Erie Loop Flows exceeding +/- 125 MW
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	

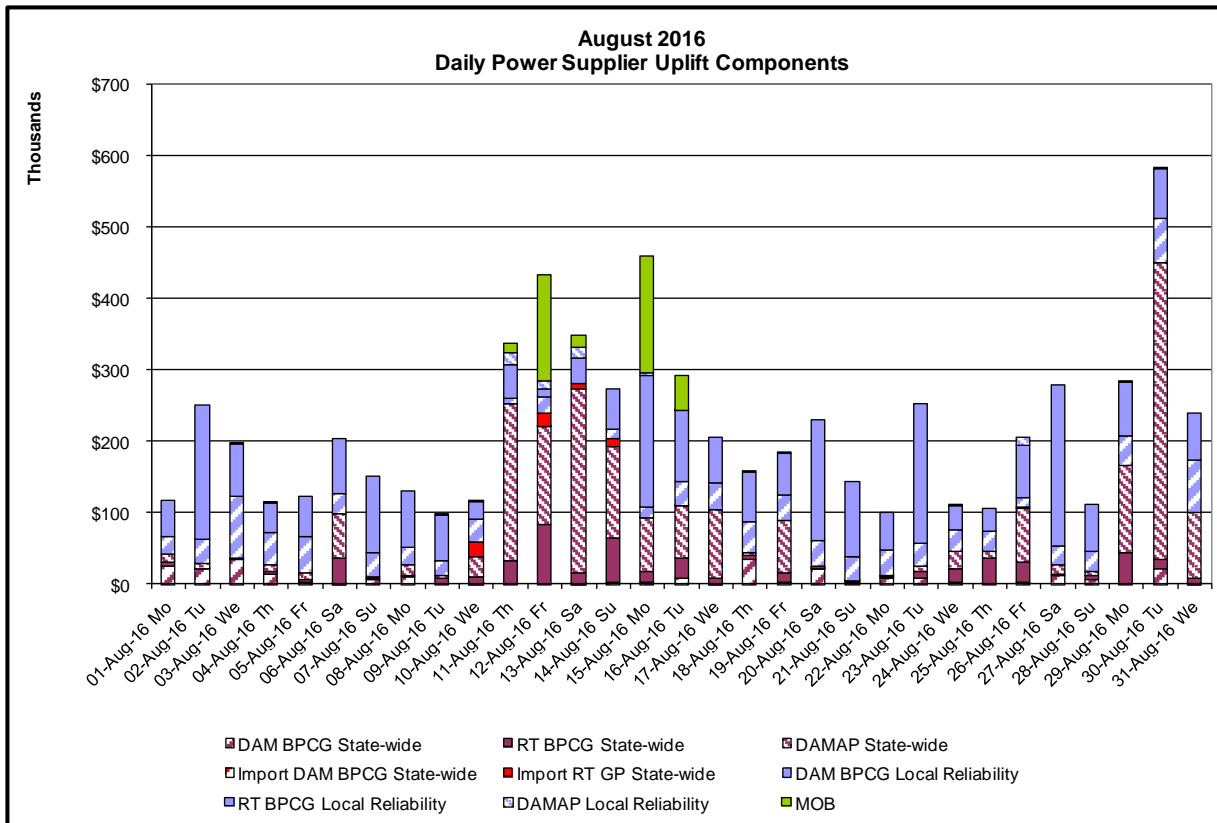
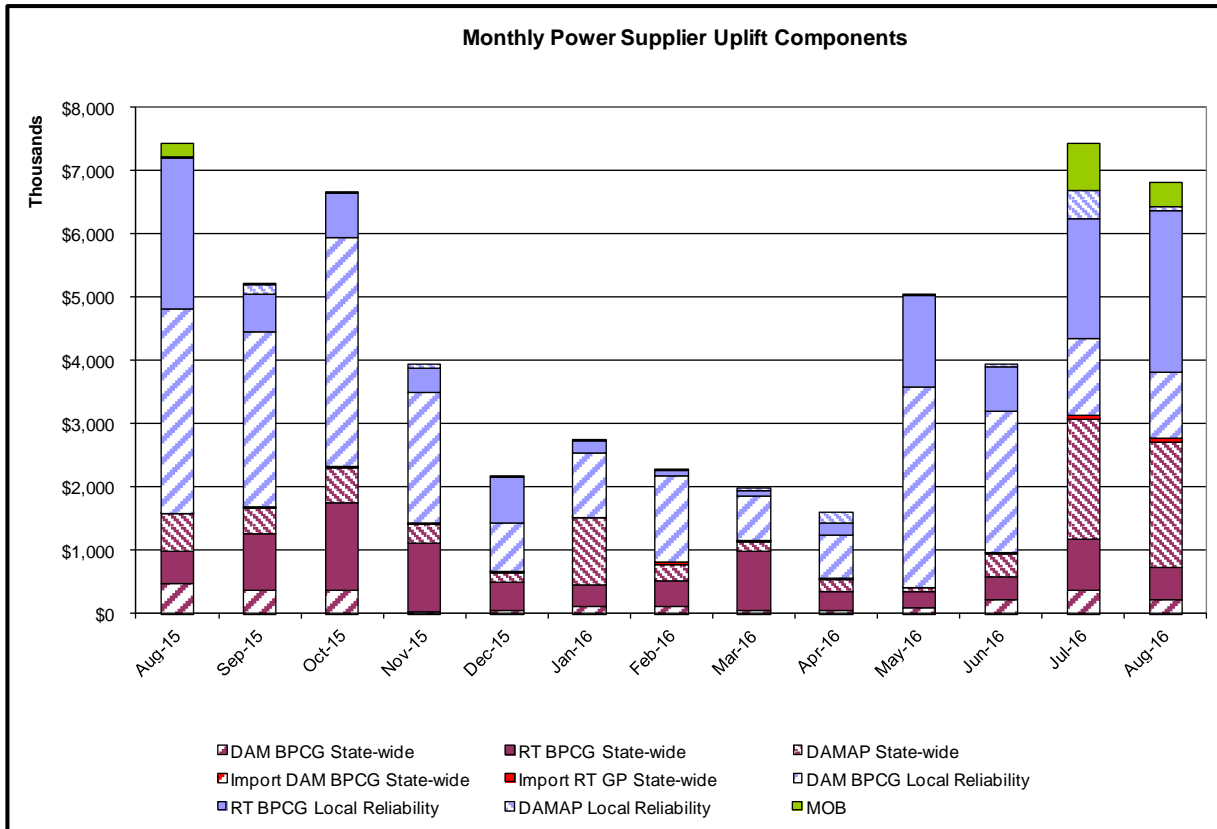
Monthly Balancing Market Congestion Report Assumptions/Notes

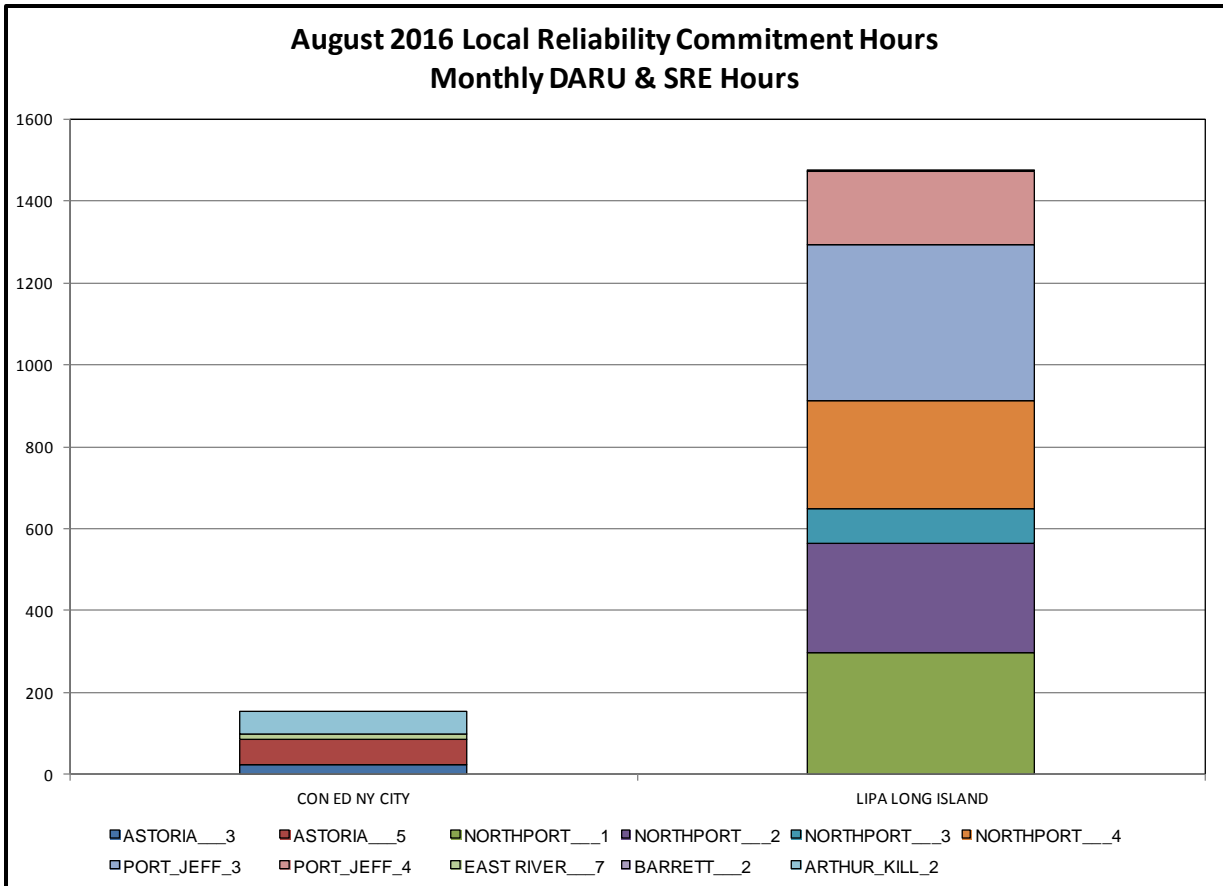
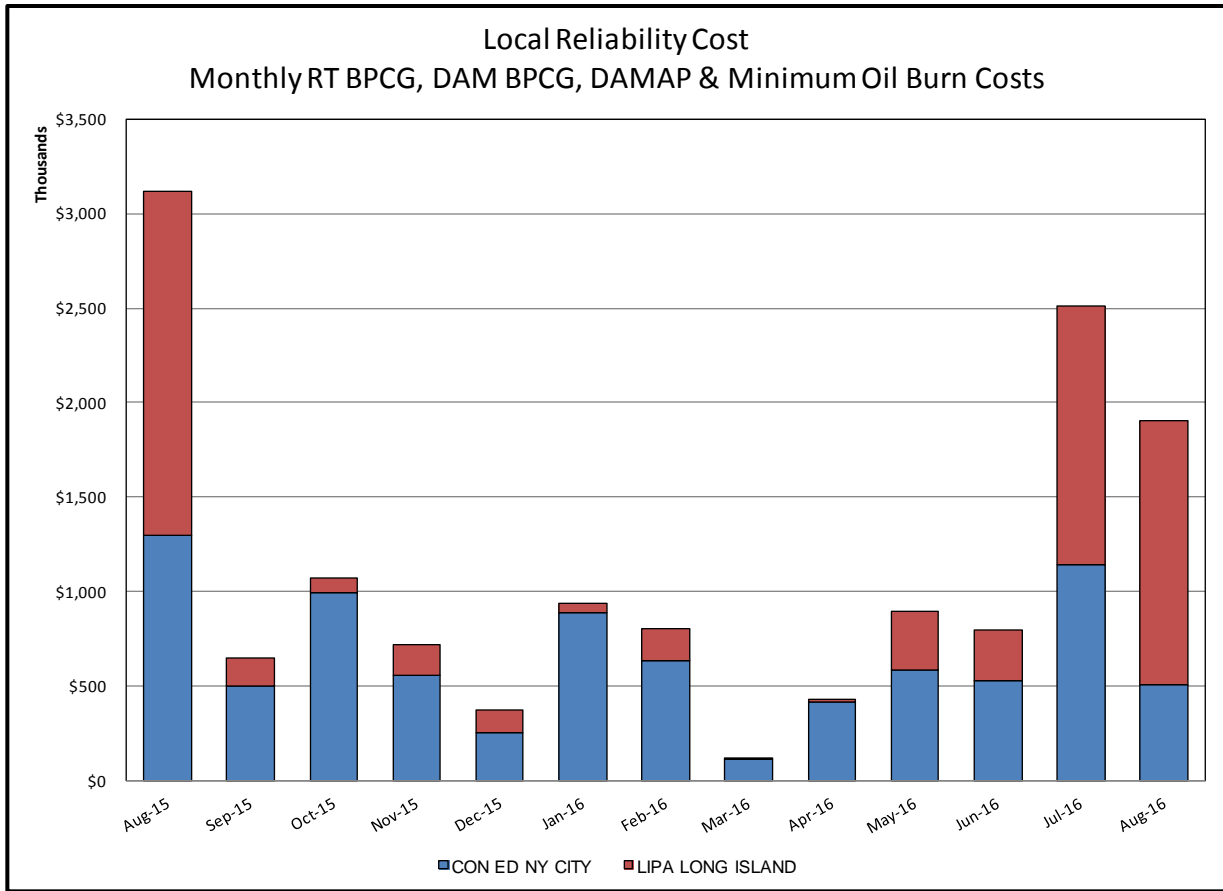
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

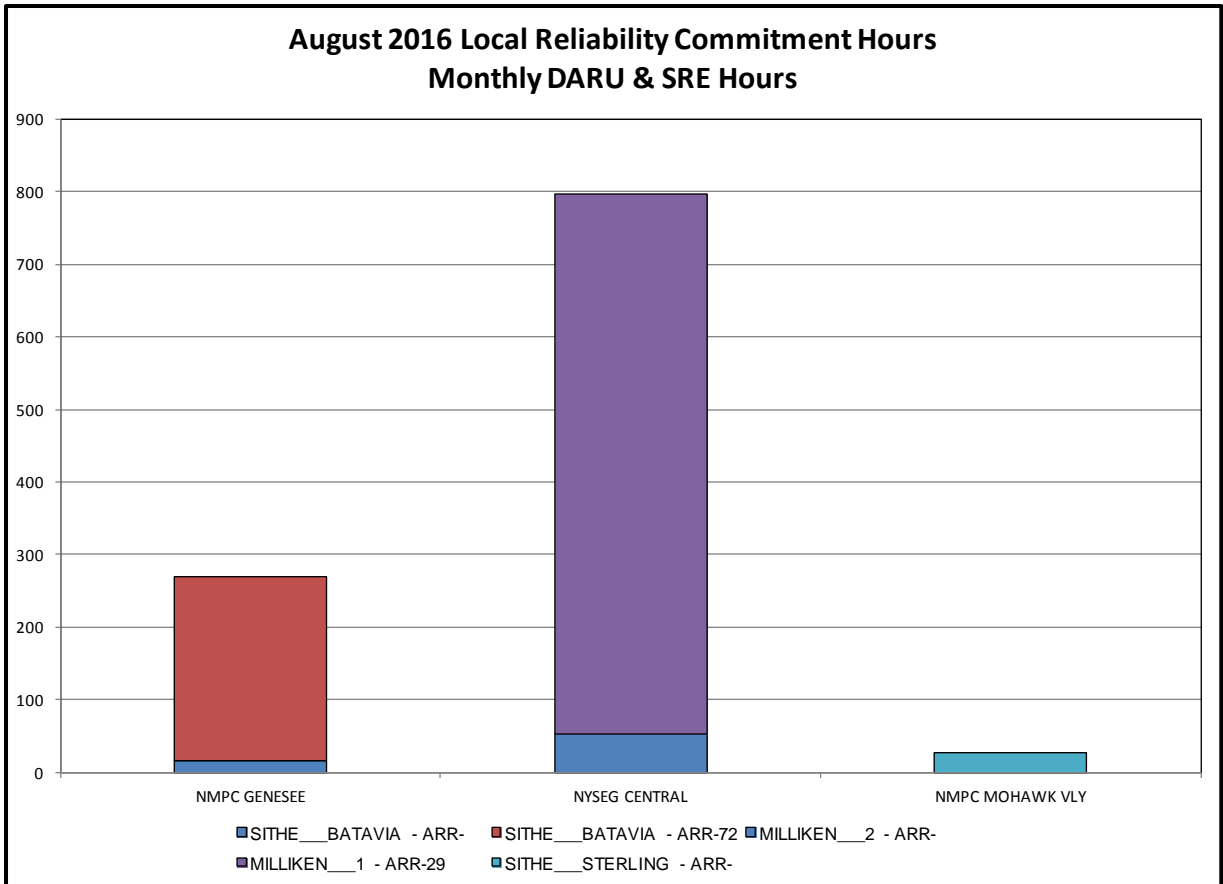
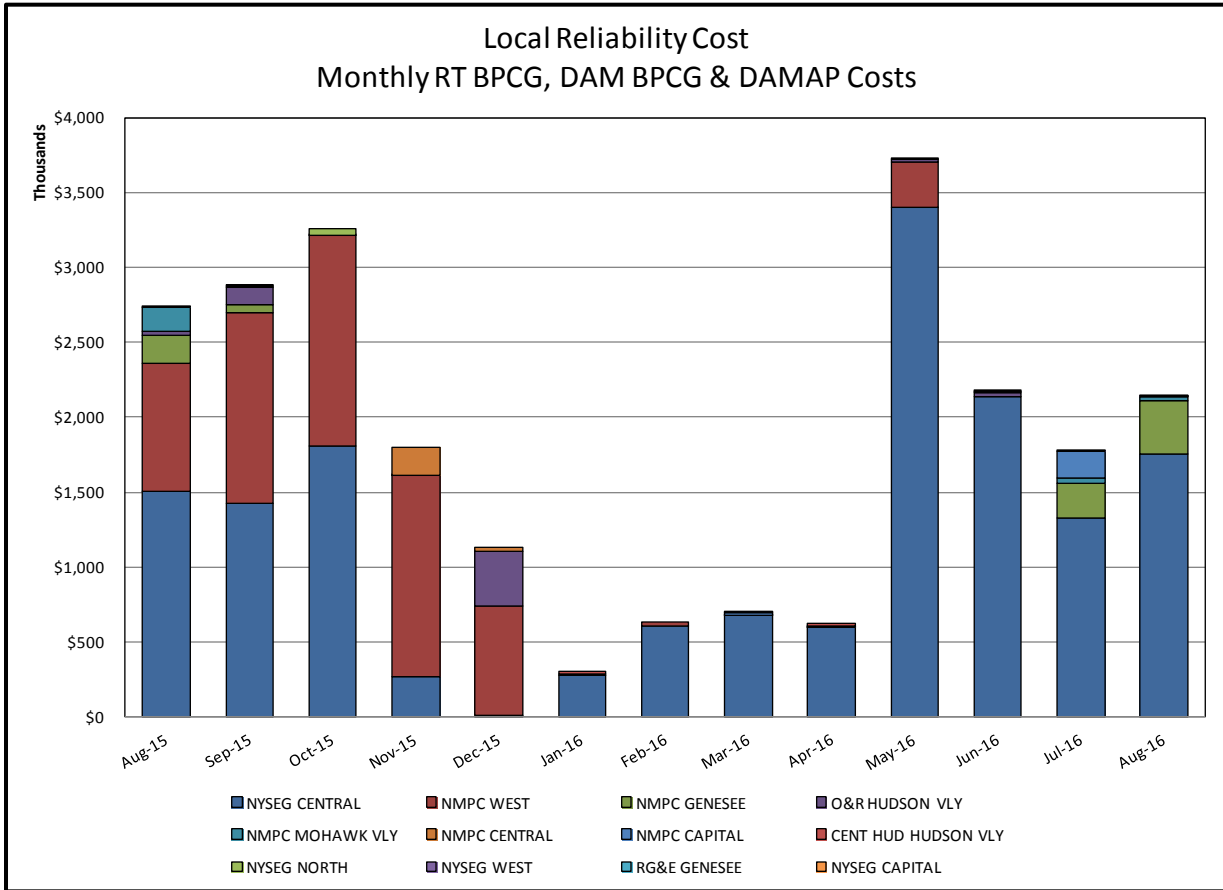


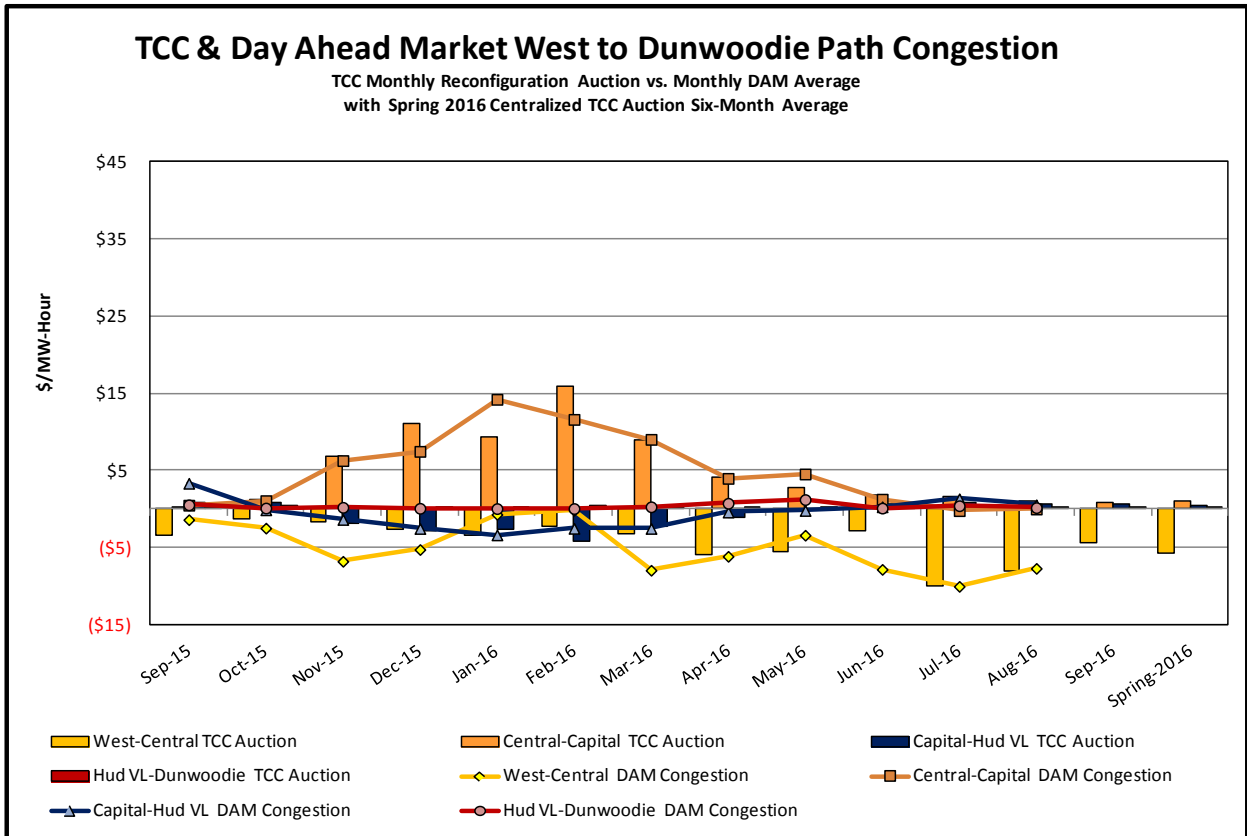
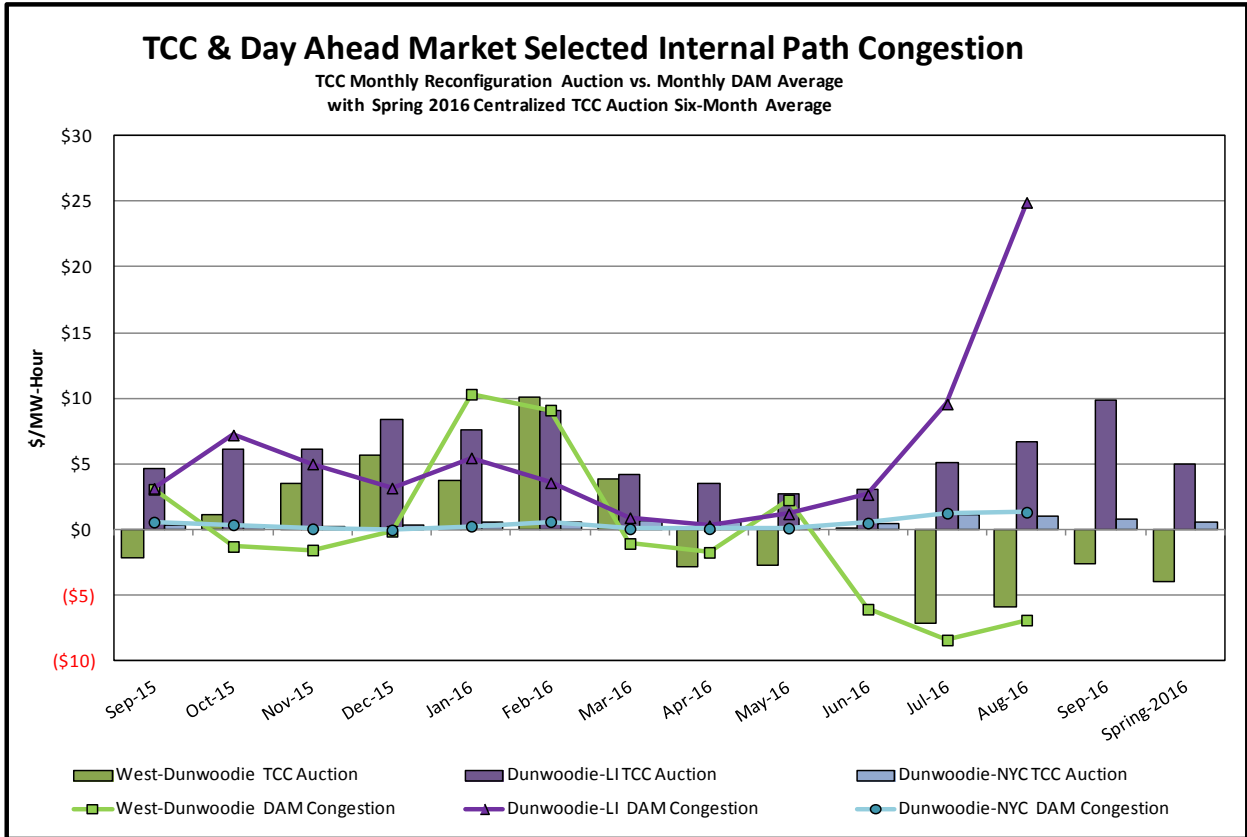
Day-Ahead Market Congestion Residual Categories

<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 Spring 2016 Centralized TCC Auction Six-Month Average

