

# ***Operations Performance Metrics Monthly Report***



## ***October 2018 Report***

### **Operations & Reliability Department New York Independent System Operator**

Prepared by NYISO Operations Analysis and Services, based on settlements initial process data collected on or before November 02, 2018.

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## October 2018 Operations Performance Highlights

- Peak load of 22,927 MW occurred on 10/10/2018 HB 16
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 7.6 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- High levels of wind curtailment in the North Country this month were coincident with the scheduled outage of the Chateaugay-Massena 765kV (#7040) and the Massena-Marcy 765kV (#MSU1)
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

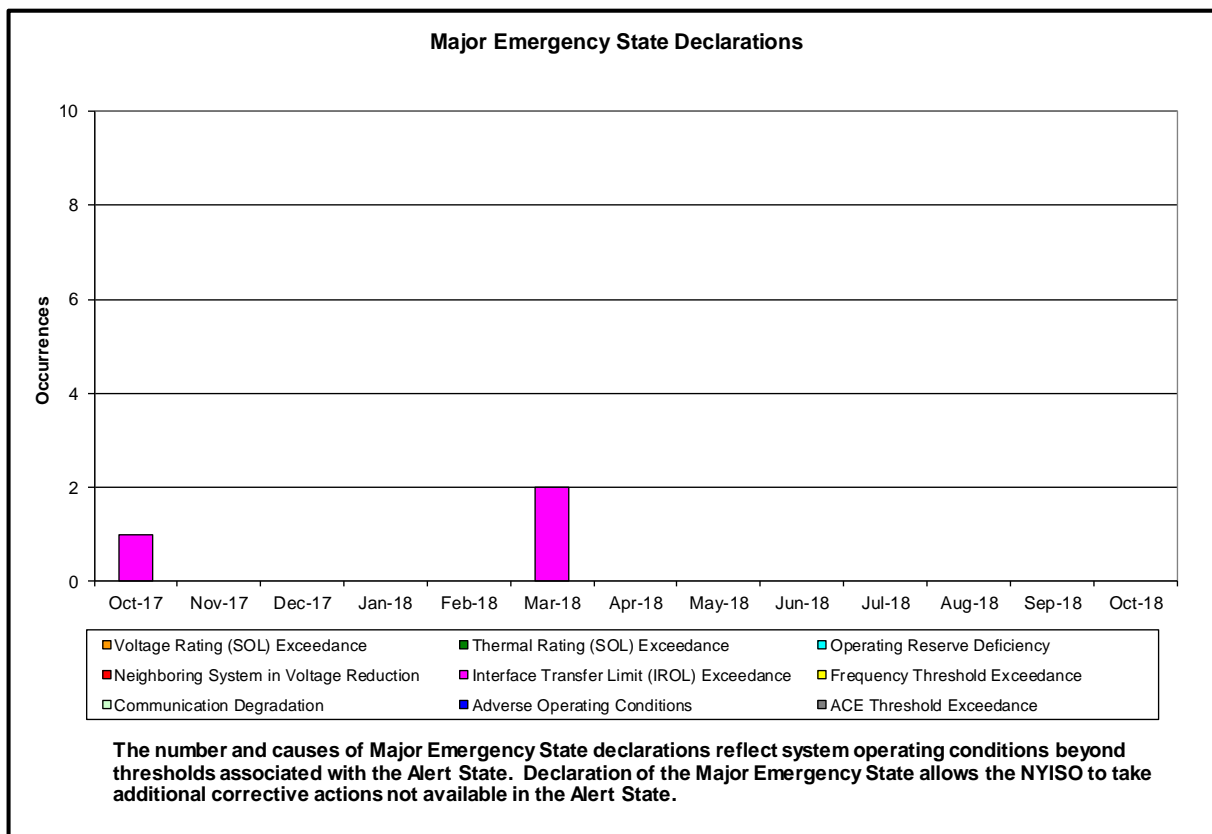
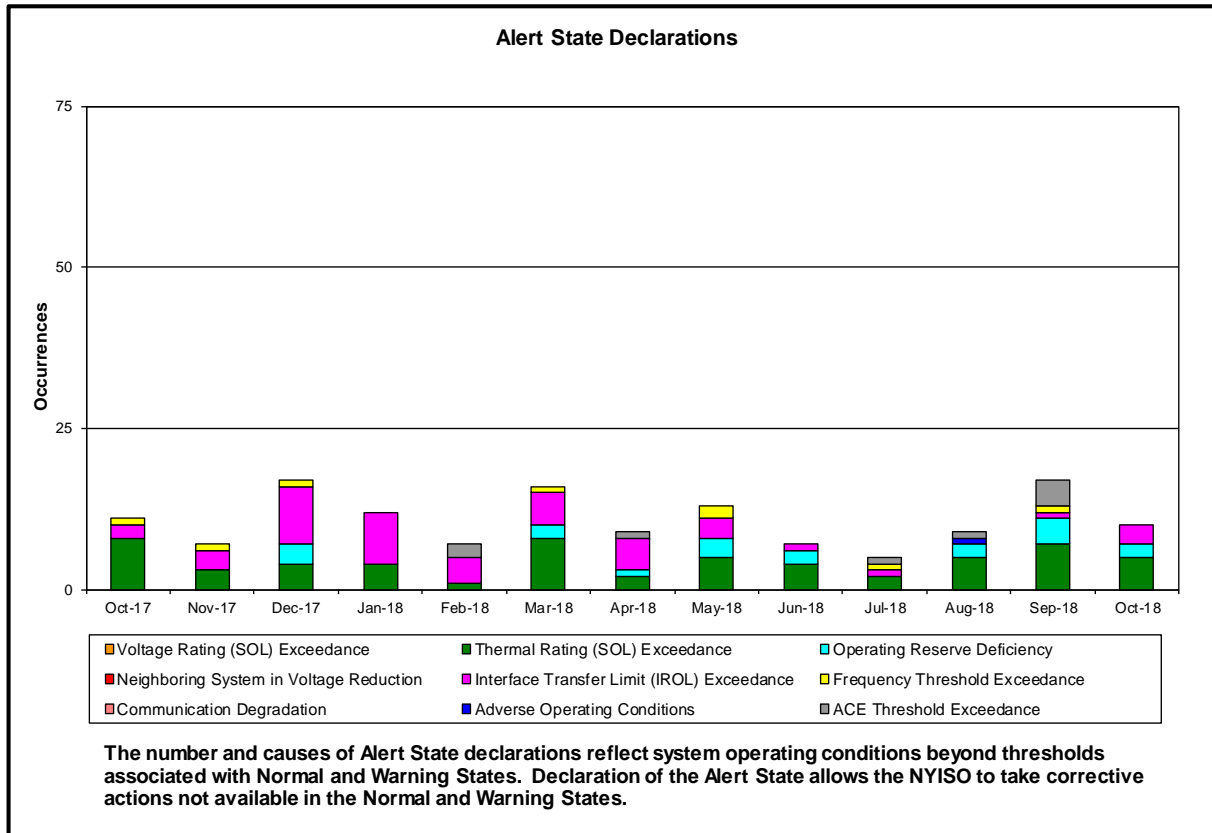
|  | Current Month Value (\$M) | Year-to-Date Value (\$M) |
|--|---------------------------|--------------------------|
| <b>NY Savings from PJM-NY Congestion Coordination</b>                  | \$2.52                    | \$13.01                  |
| <b>NY Savings from PJM-NY Coordinated Transaction Scheduling</b>       | (\$0.69)                  | (\$0.10)                 |
| <b>NY Savings from NE-NY Coordinated Transaction Scheduling</b>        | \$0.22                    | (\$0.45)                 |
| <b>Total NY Savings</b>  | \$2.05                    | \$12.46                  |
| <b>Regional Savings from PJM-NY Coordinated Transaction Scheduling</b> | \$0.97                    | \$3.47                   |
| <b>Regional Savings from NE-NY Coordinated Transaction Scheduling</b>  | \$0.04                    | \$0.70                   |
| <b>Total Regional Savings</b>  | \$1.01                    | \$4.17                   |

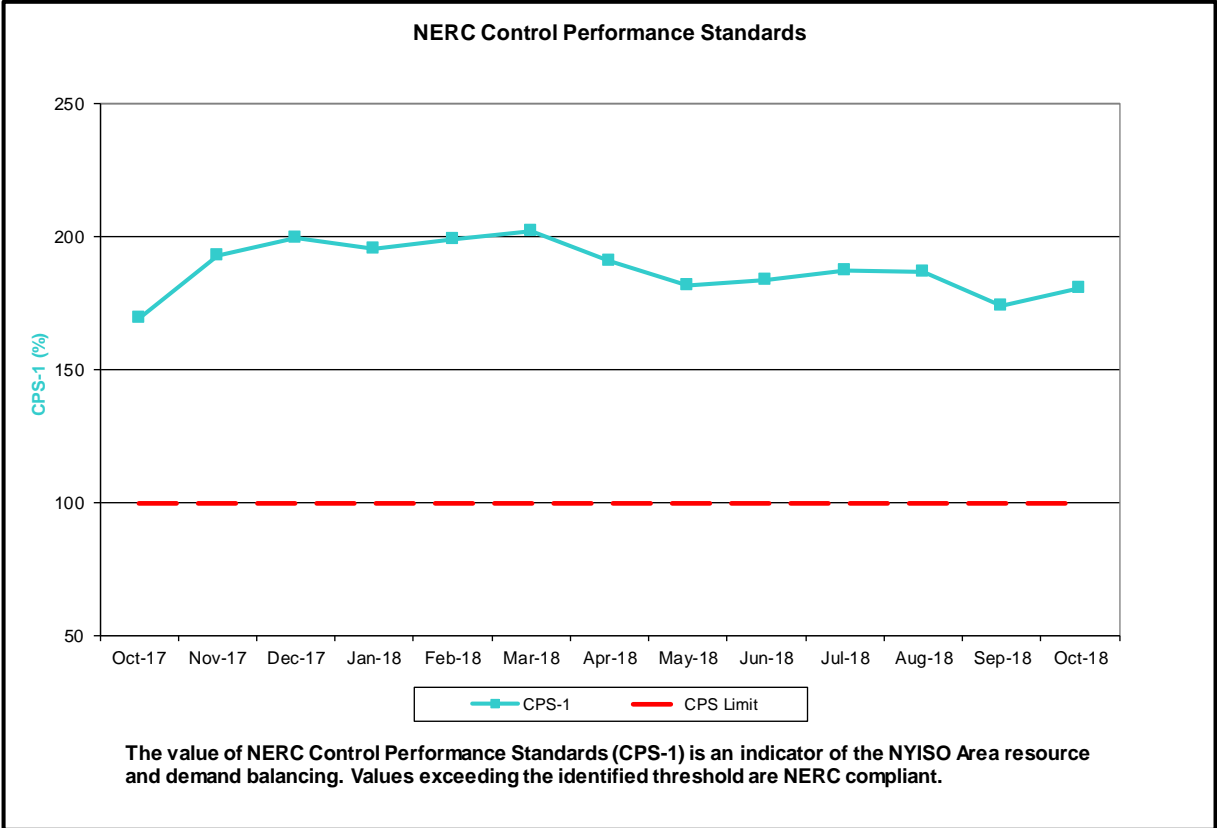
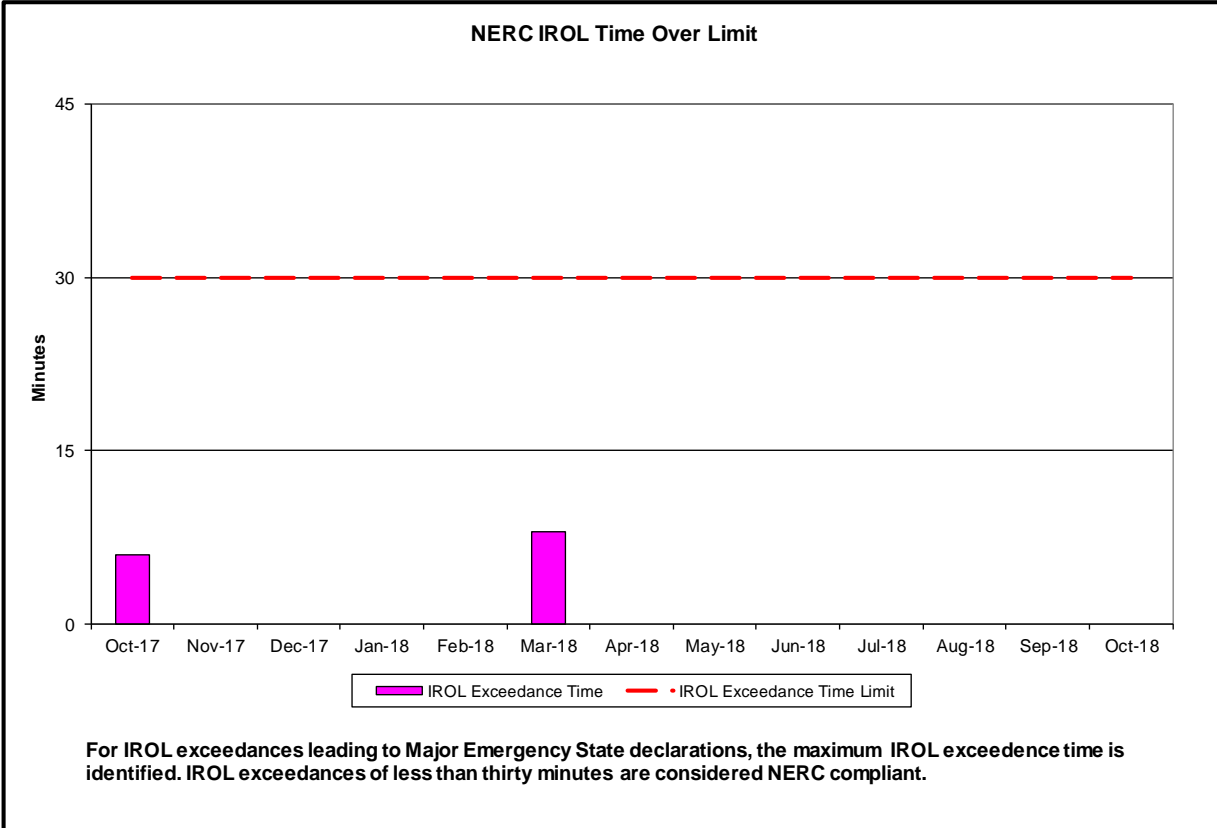
- The following table identifies the Monthly ICAP spot market prices by locality and changes from the end of the prior Winter Capability period.

| Spot Auction Price Results | NYCA     | Lower Hudson Valley Zones | New York City Zone | Long Island Zone |
|----------------------------|----------|---------------------------|--------------------|------------------|
| November 2018 Spot Price   | \$0.10   | \$1.59                    | \$1.59             | \$0.67           |
| April 2018 Spot Price      | \$0.25   | \$4.71                    | \$4.71             | \$0.70           |
| Delta                      | (\$0.15) | (\$3.12)                  | (\$3.12)           | (\$0.03)         |

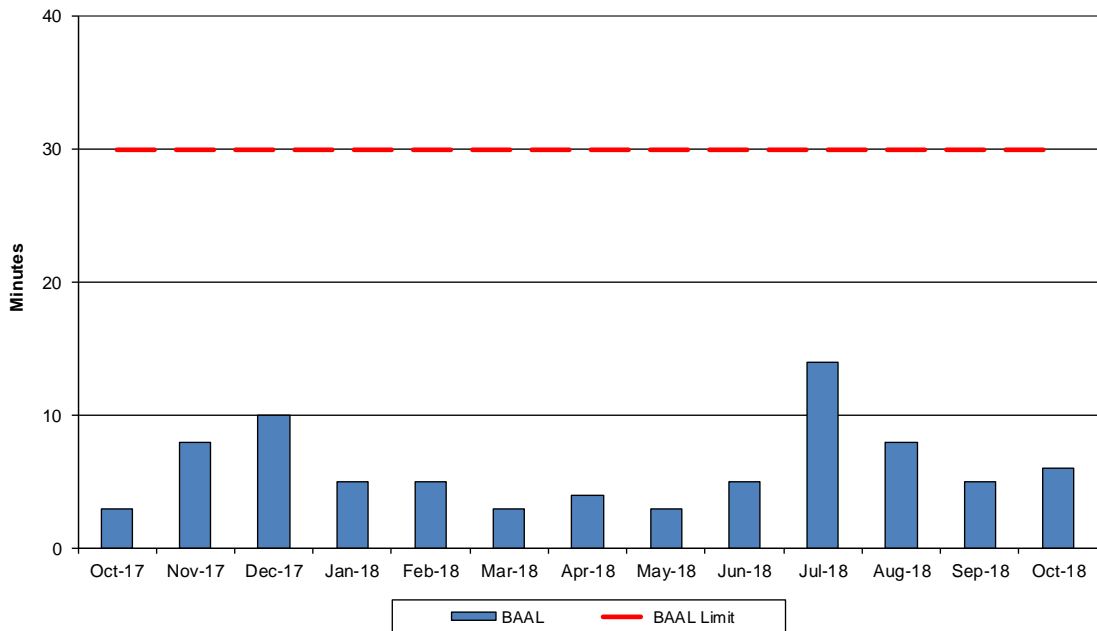
- Price changes from April 2018 to November 2018 are driven by changes in supply as well as Capability Year inputs such as demand curve parameters, Locational Capacity Requirements, the Installed Reserve Margin and the load forecast.

## Reliability Performance Metrics



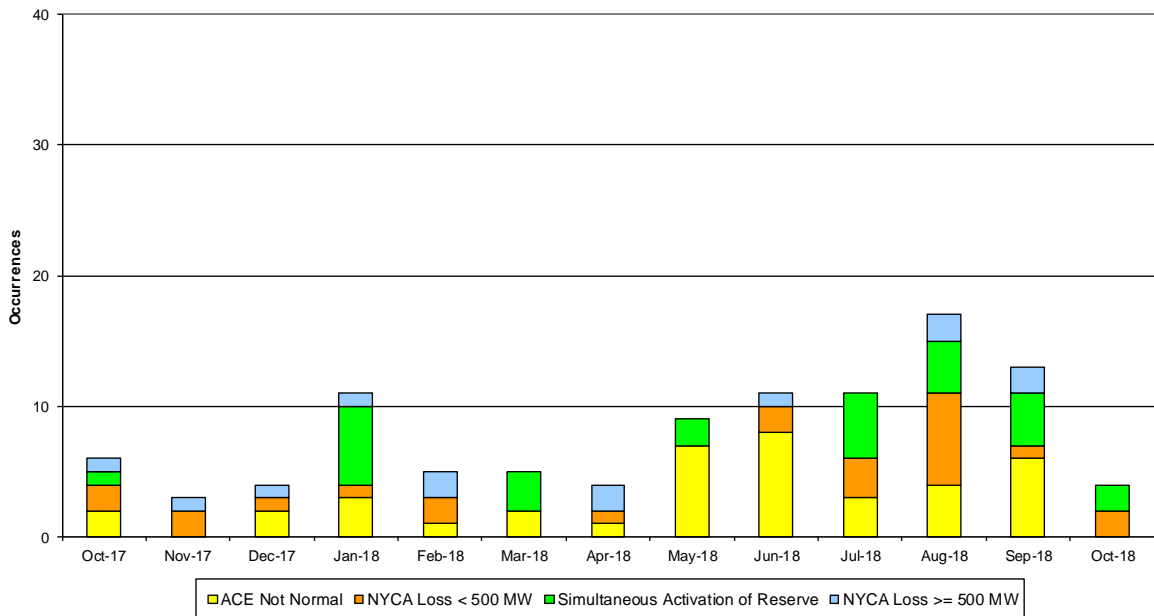


### NERC Balancing Authority ACE Limit Standard

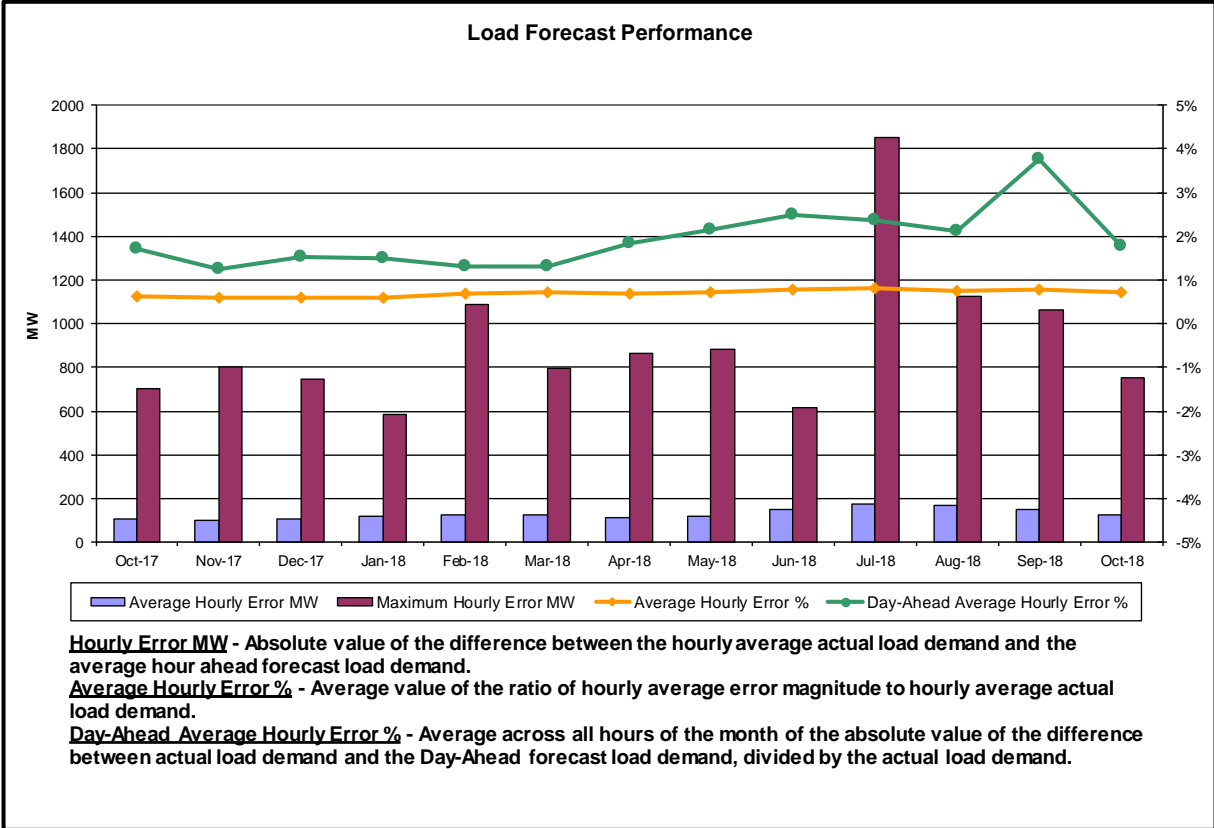
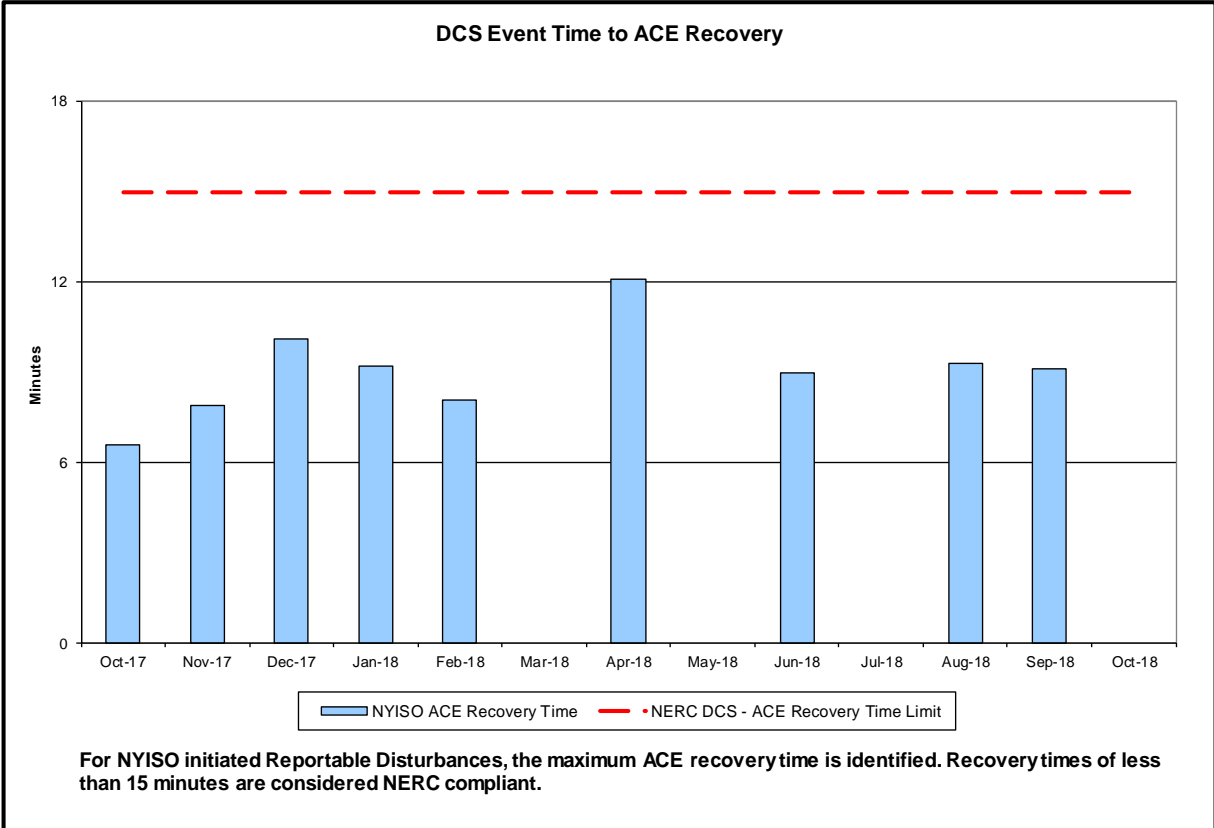


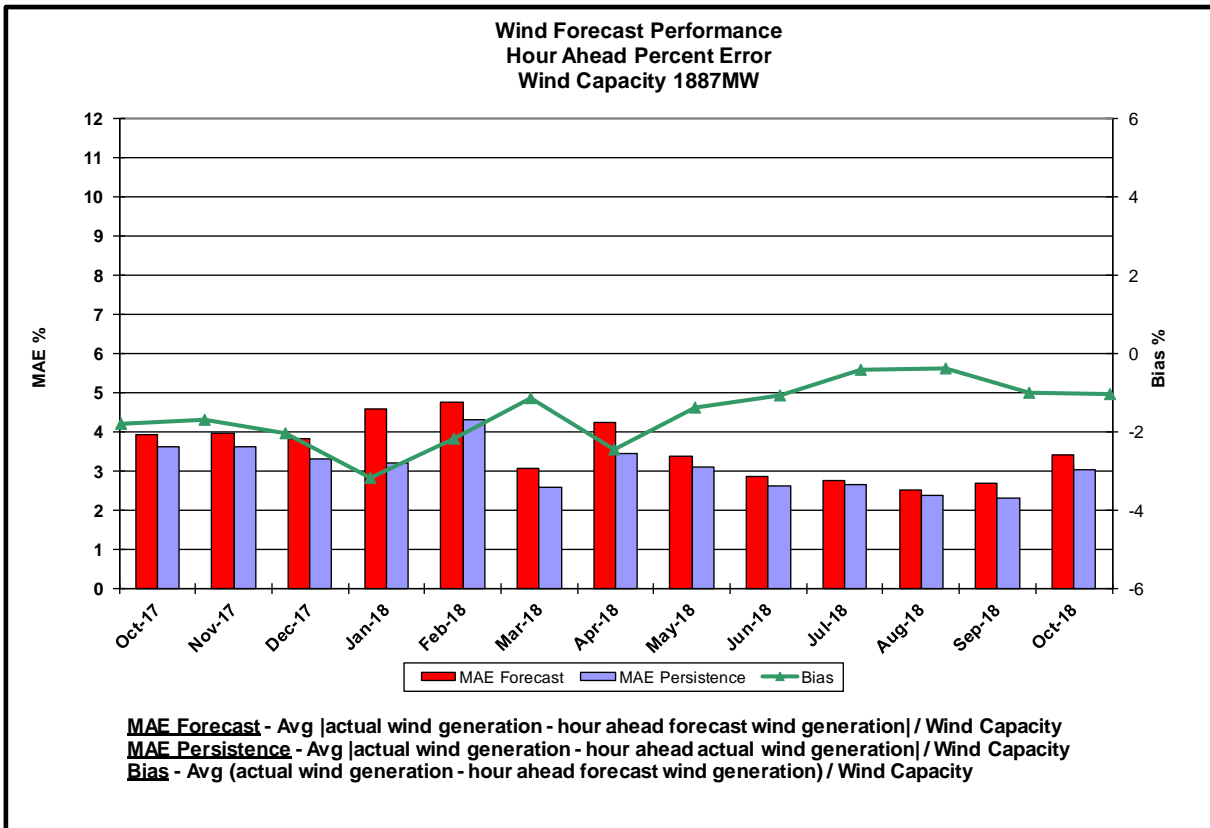
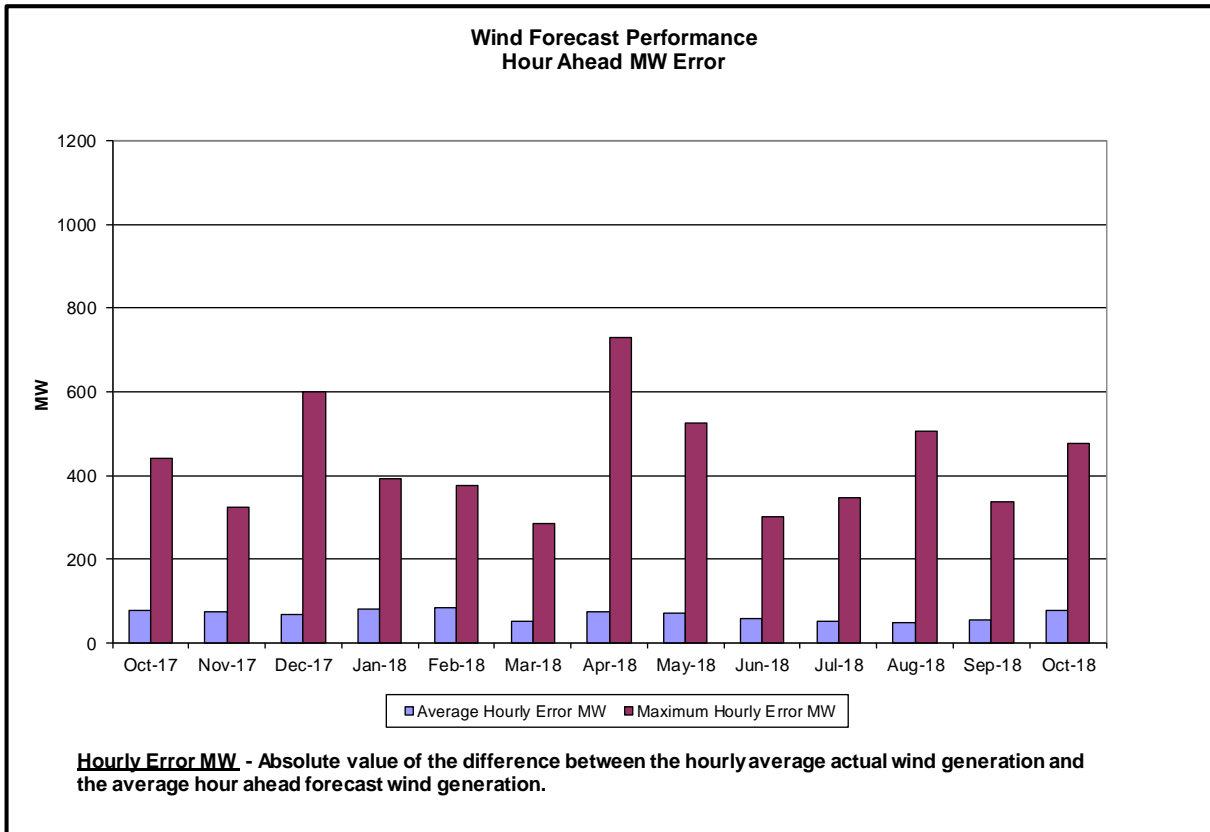
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

### Reserve Activations

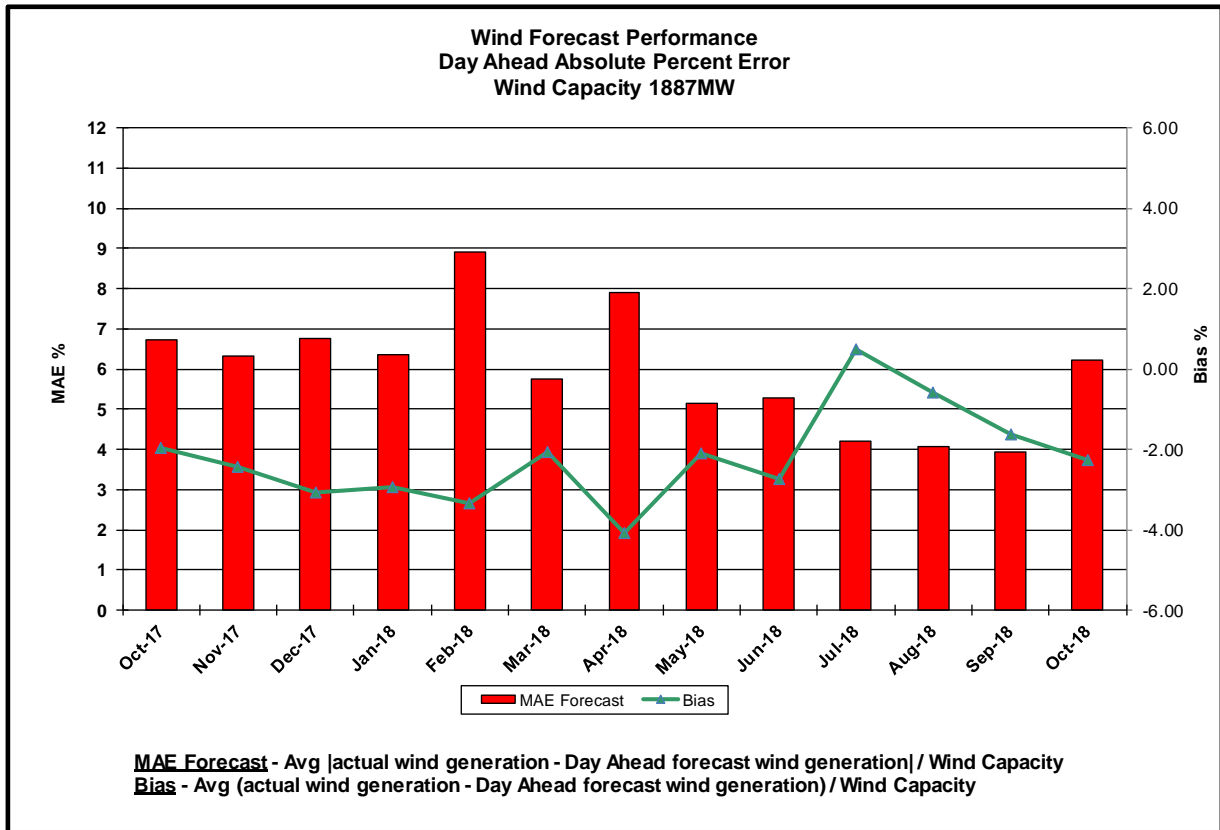
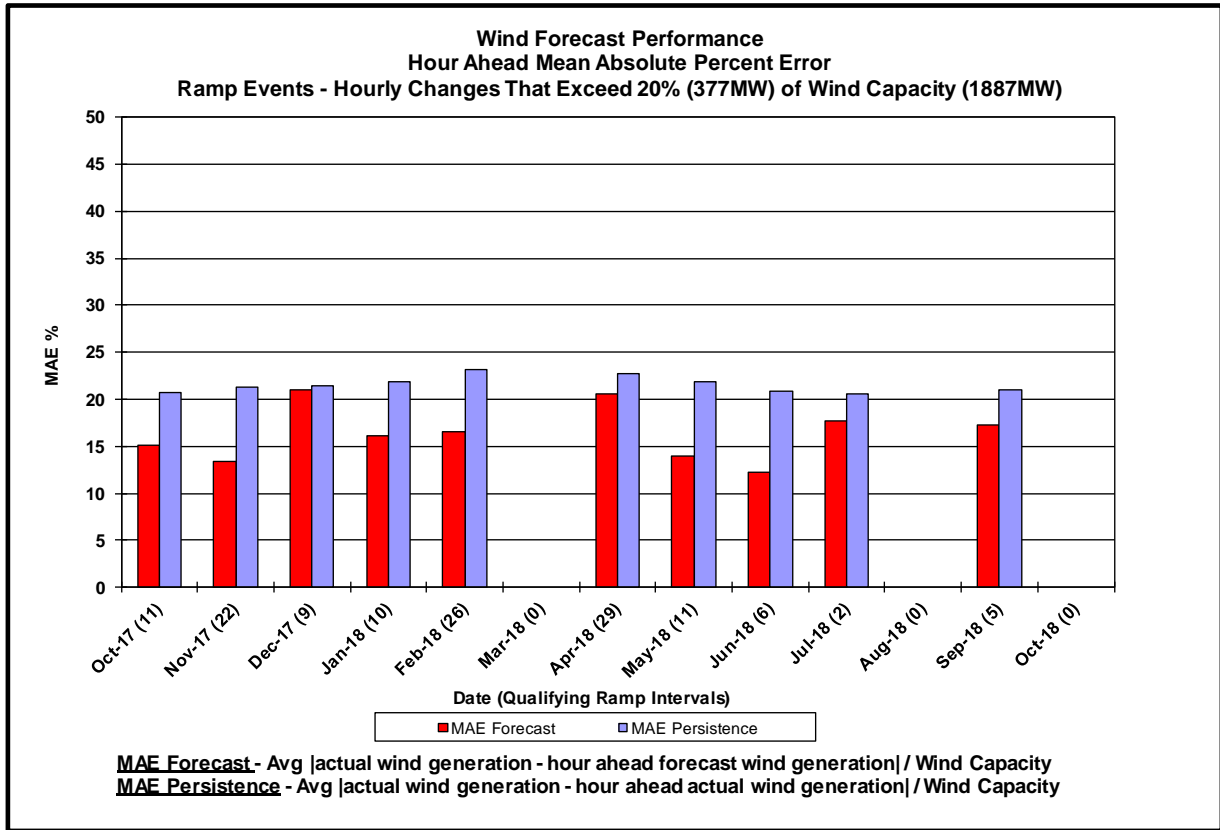


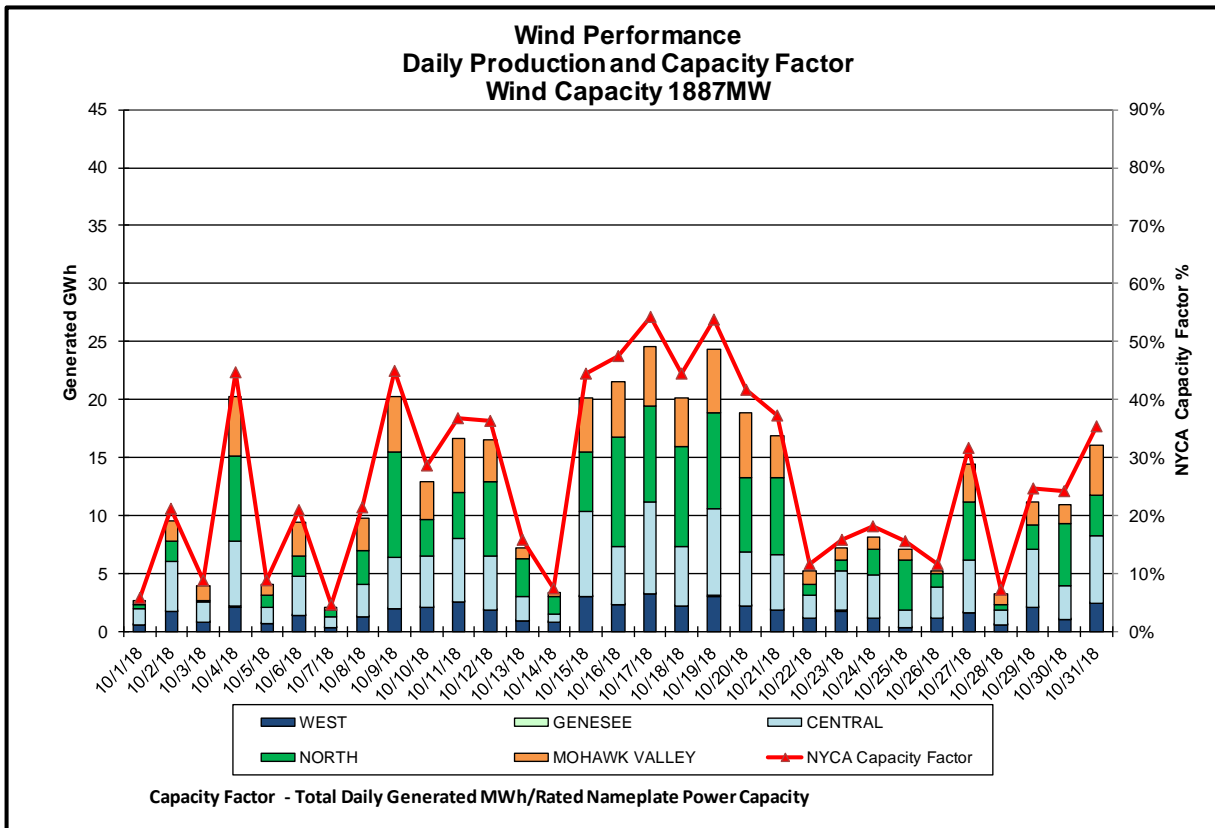
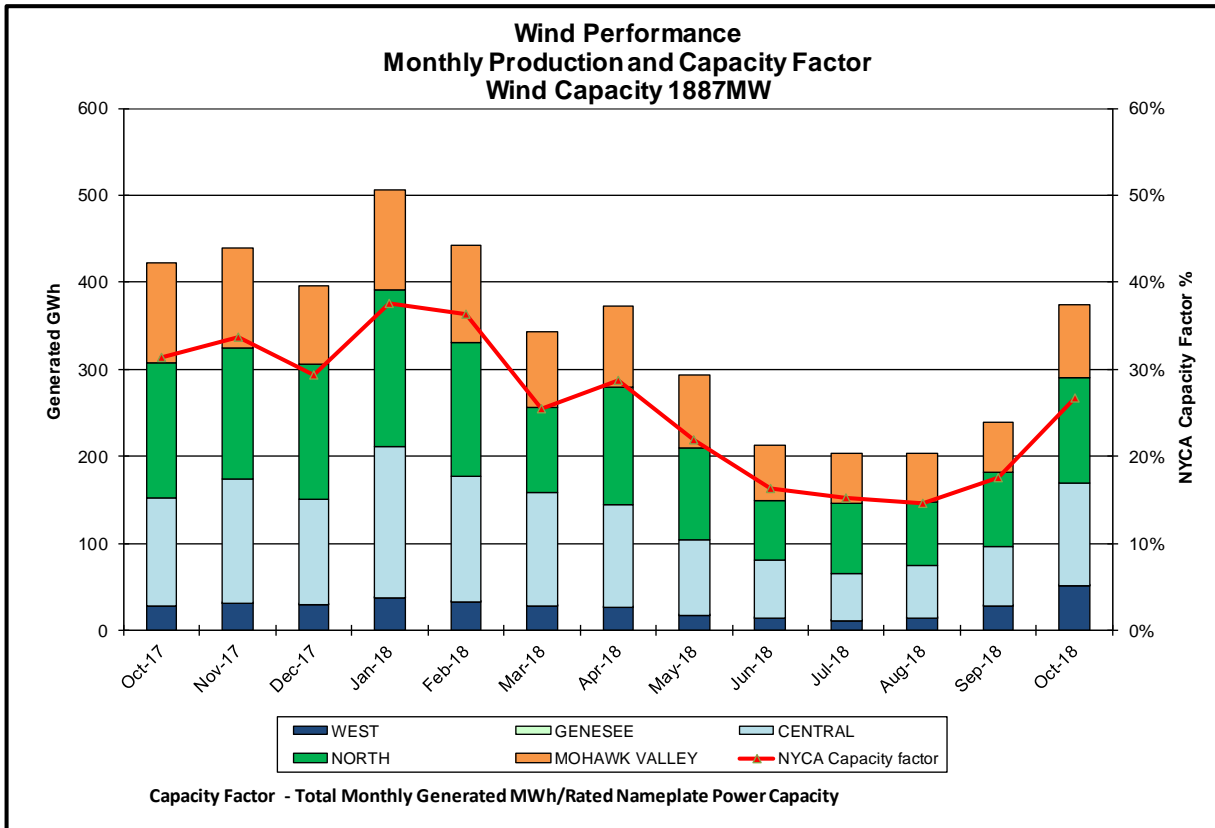
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.

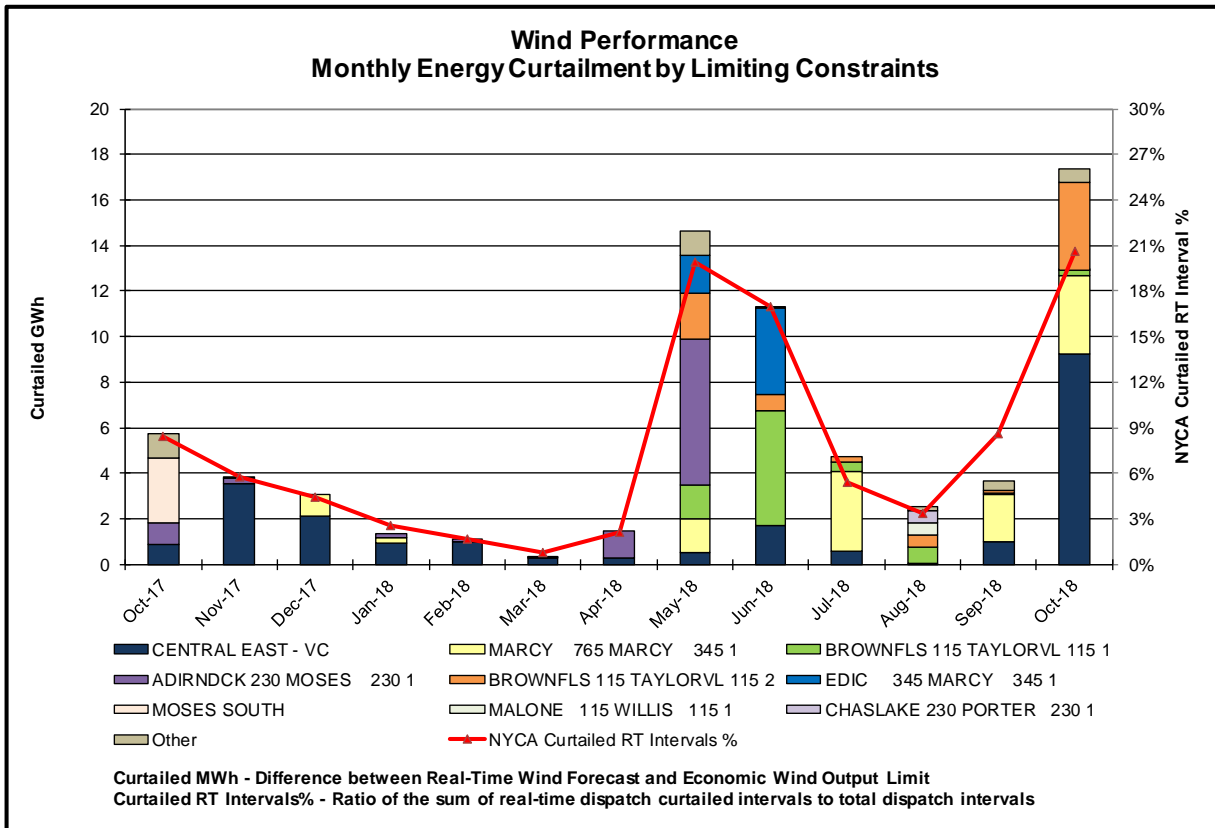
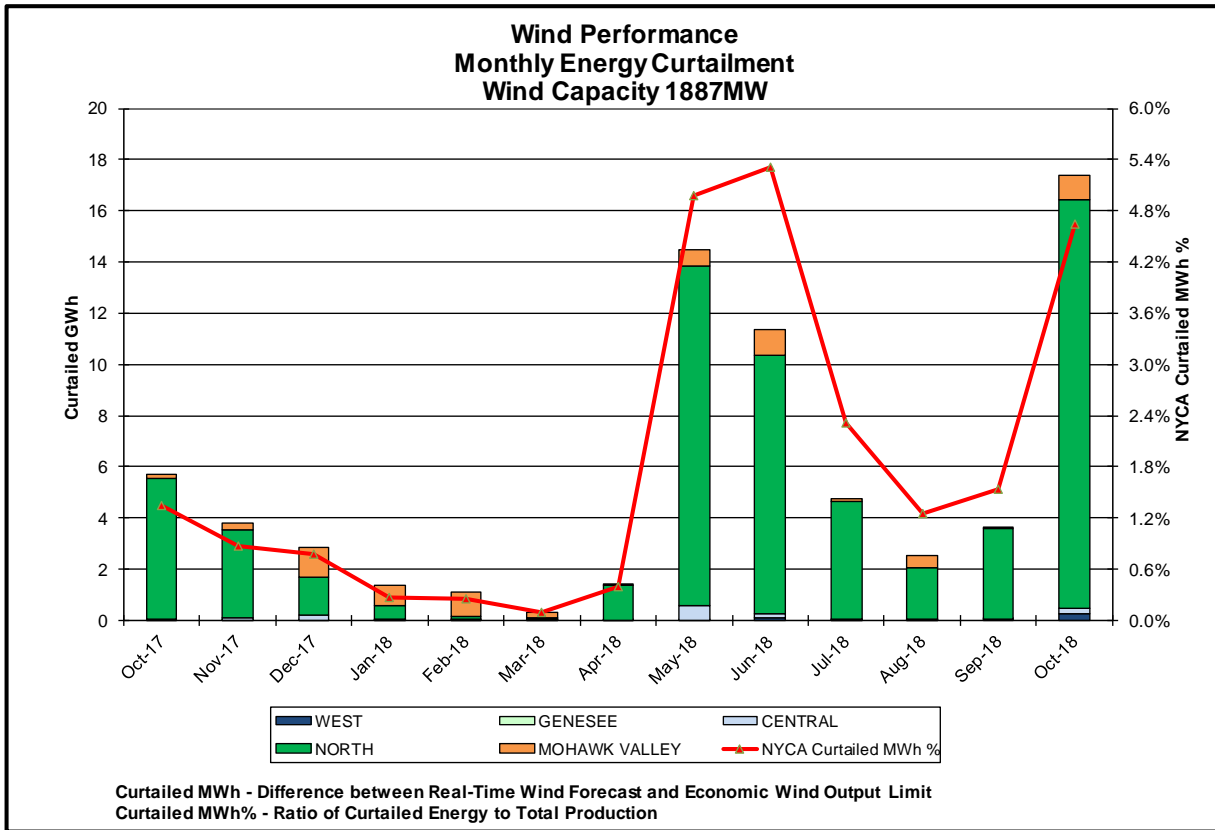


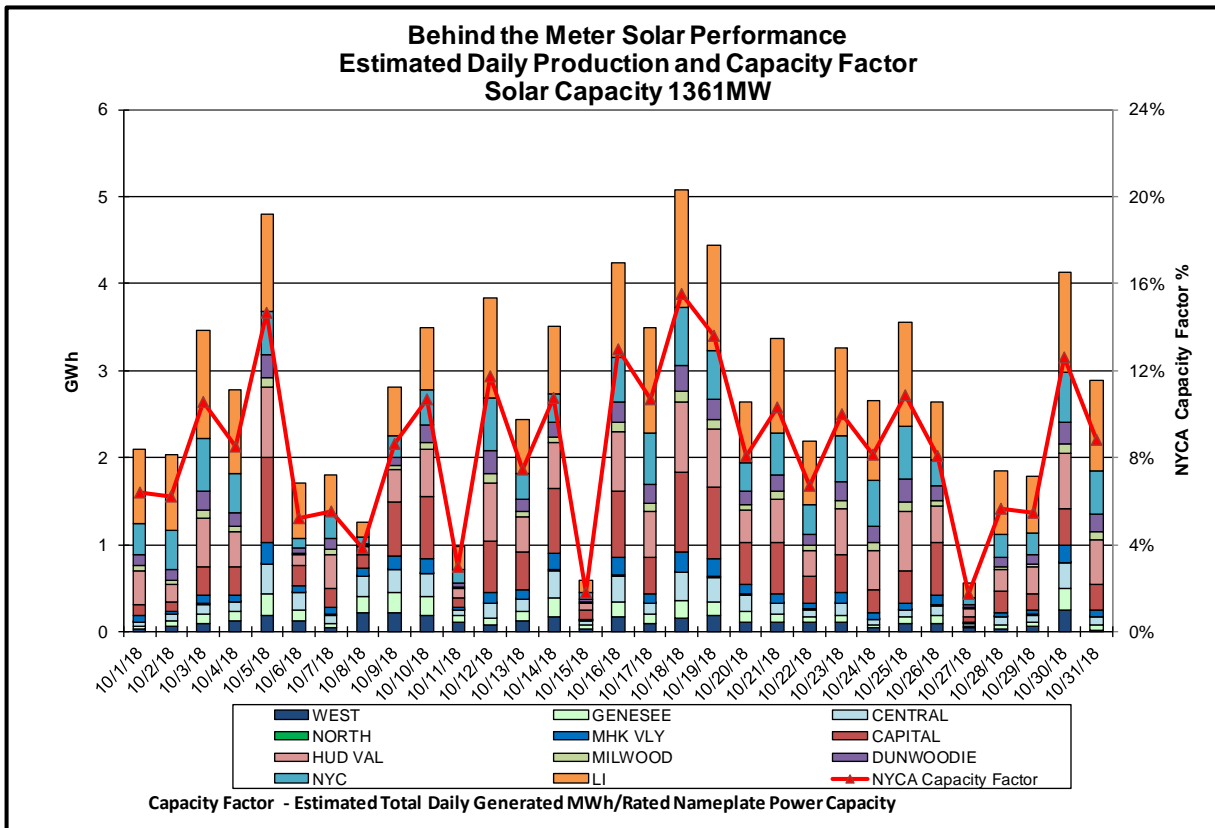
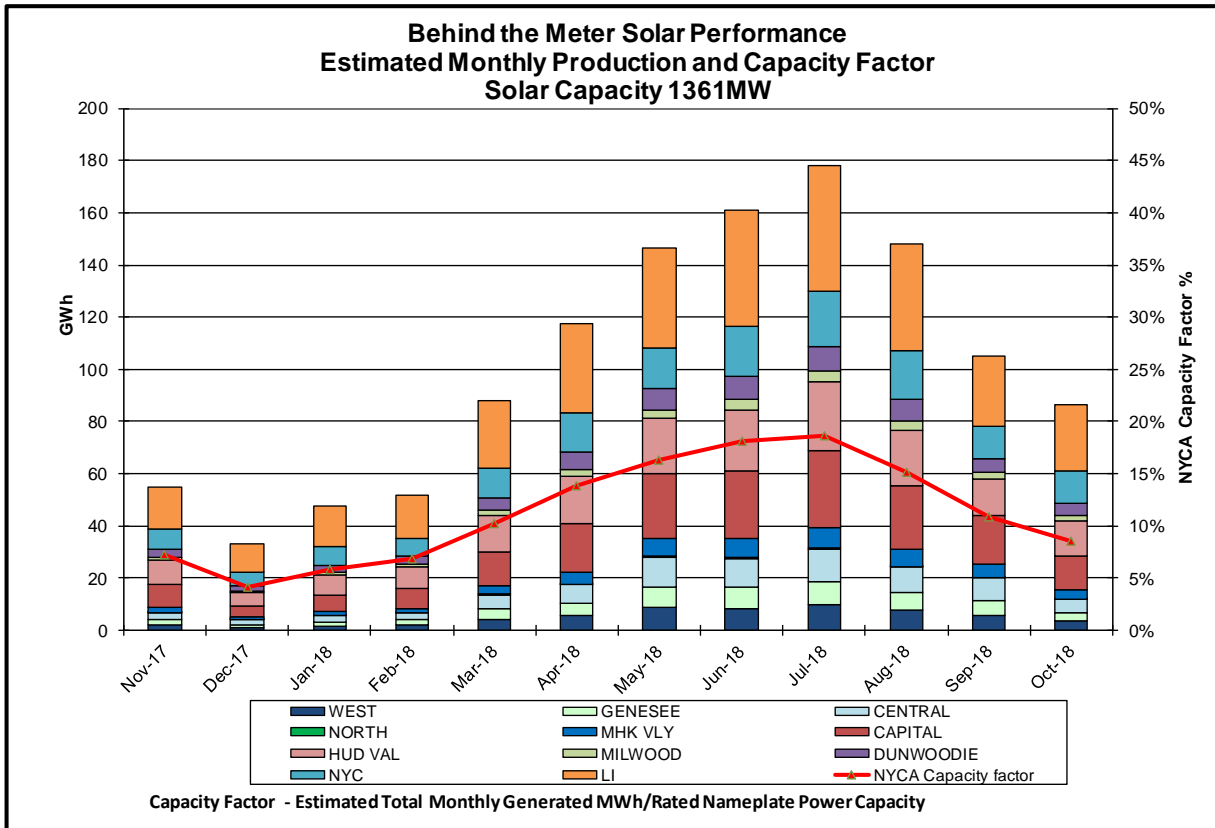


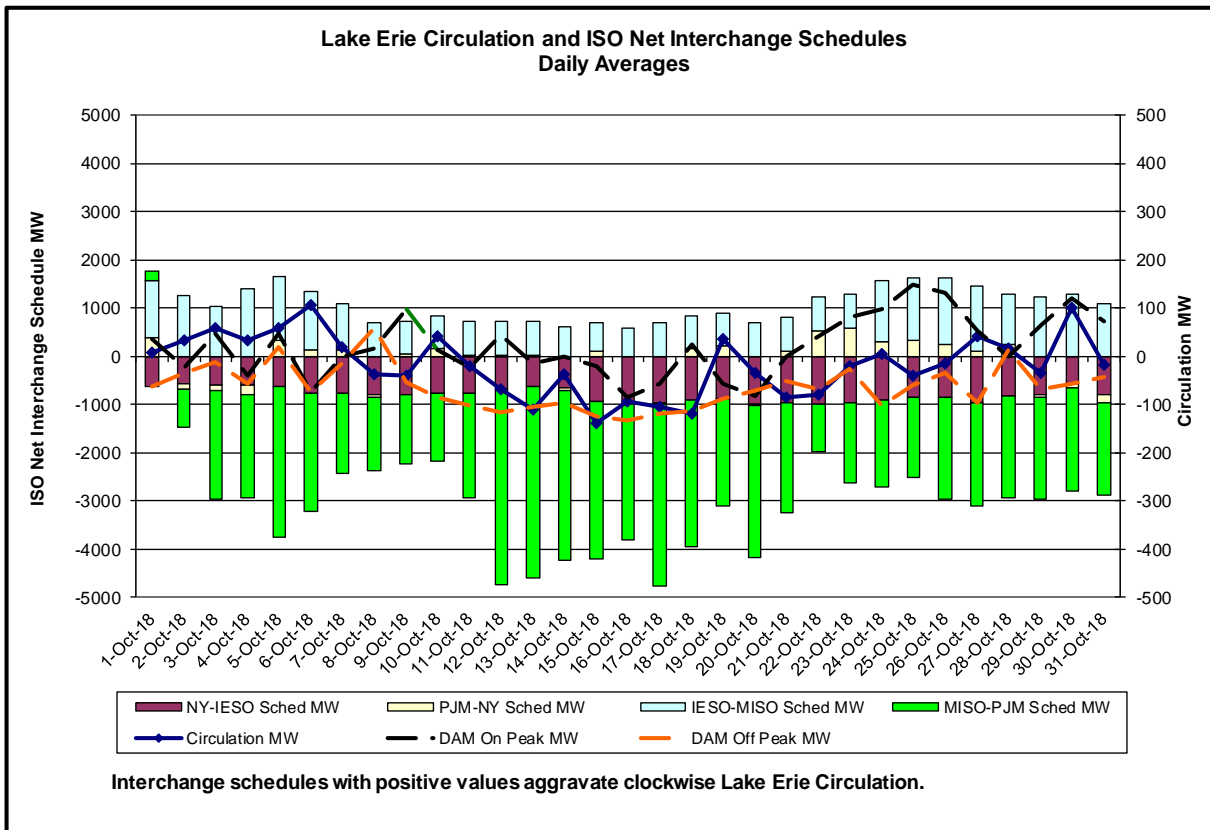
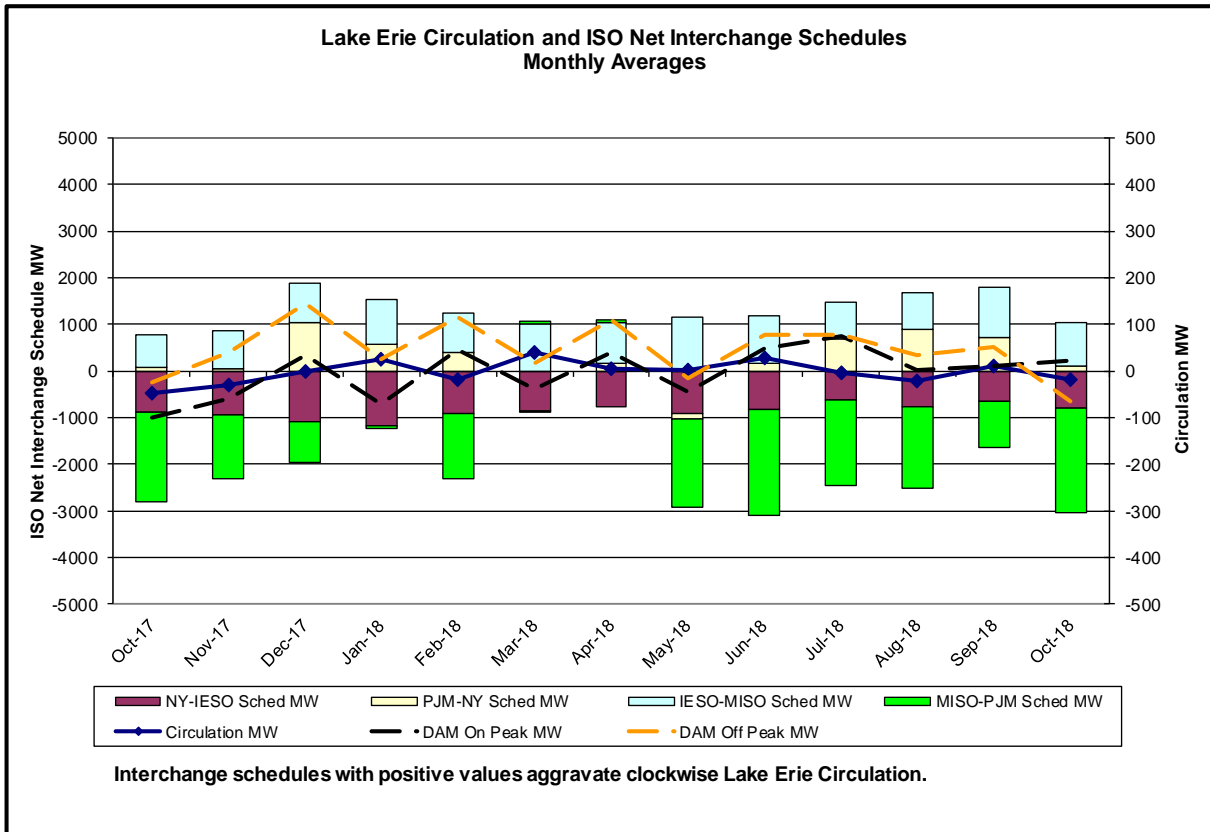




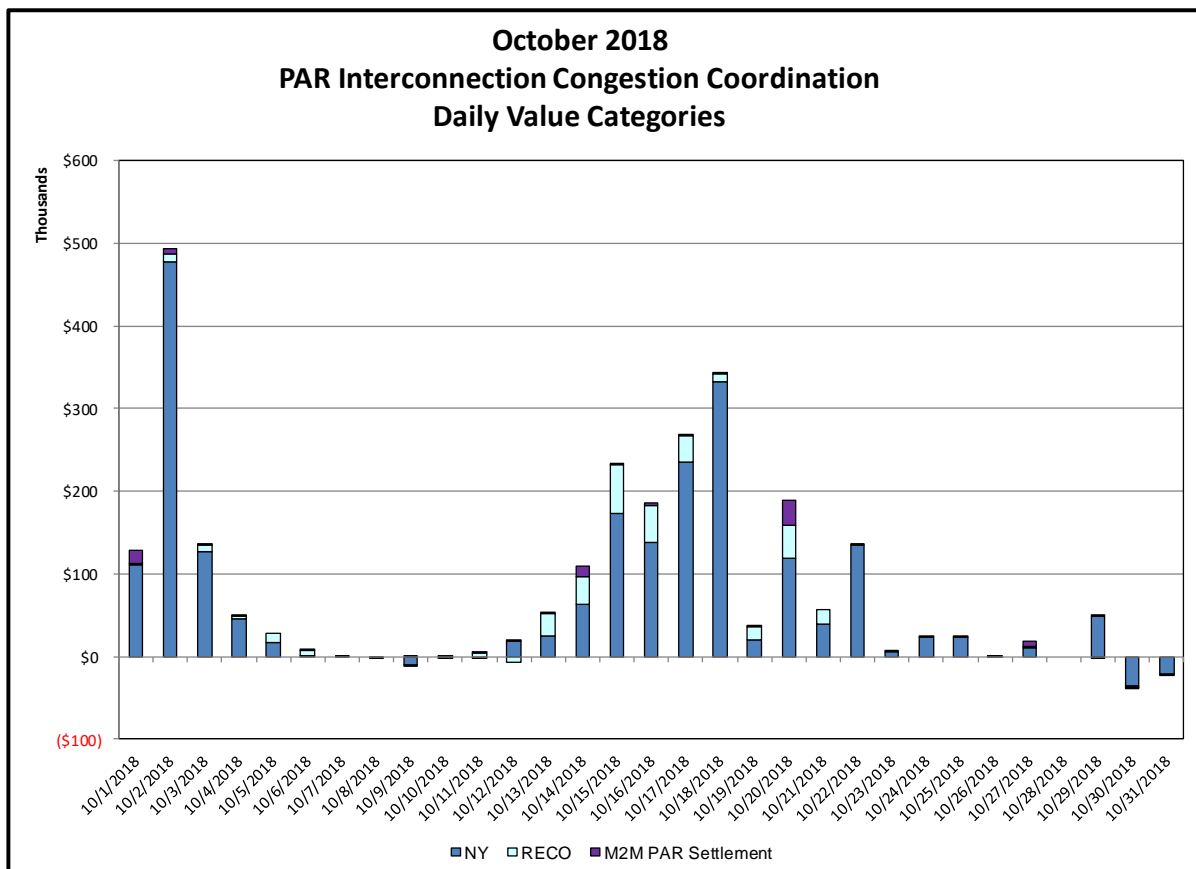
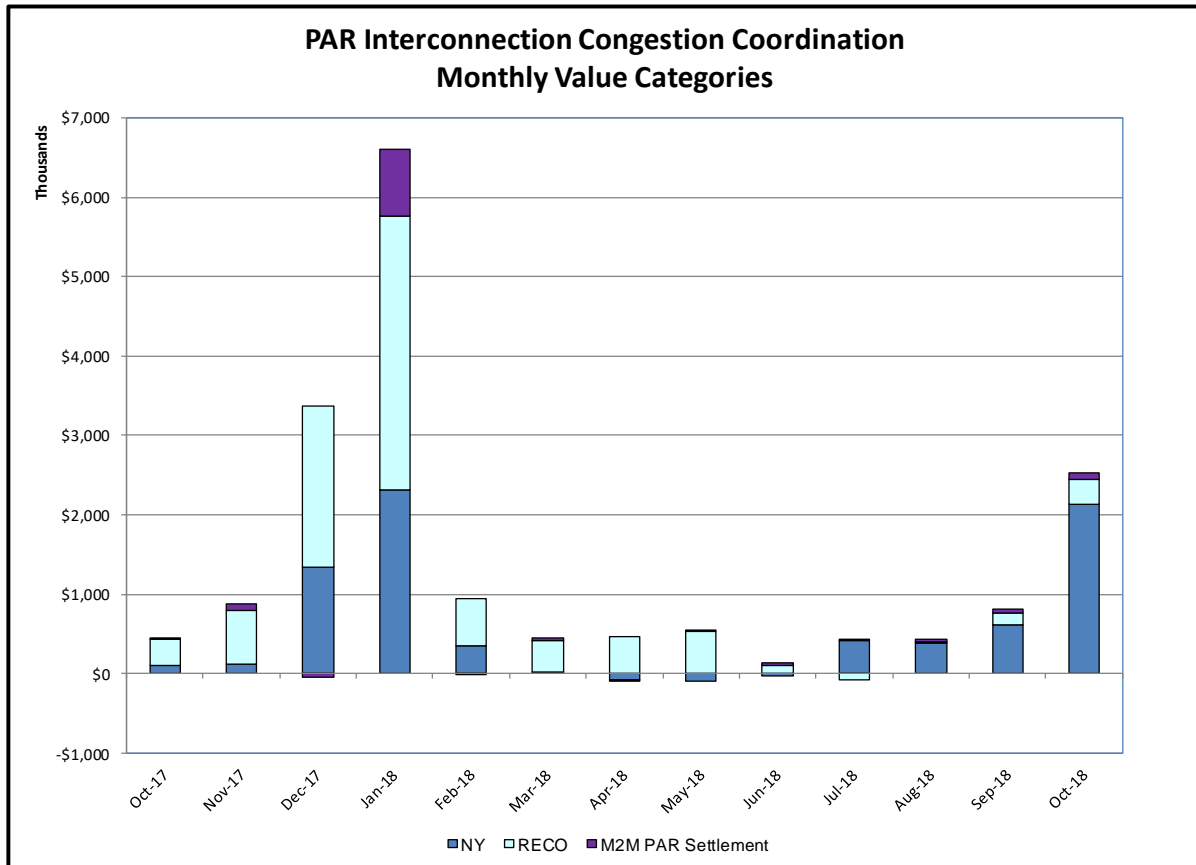






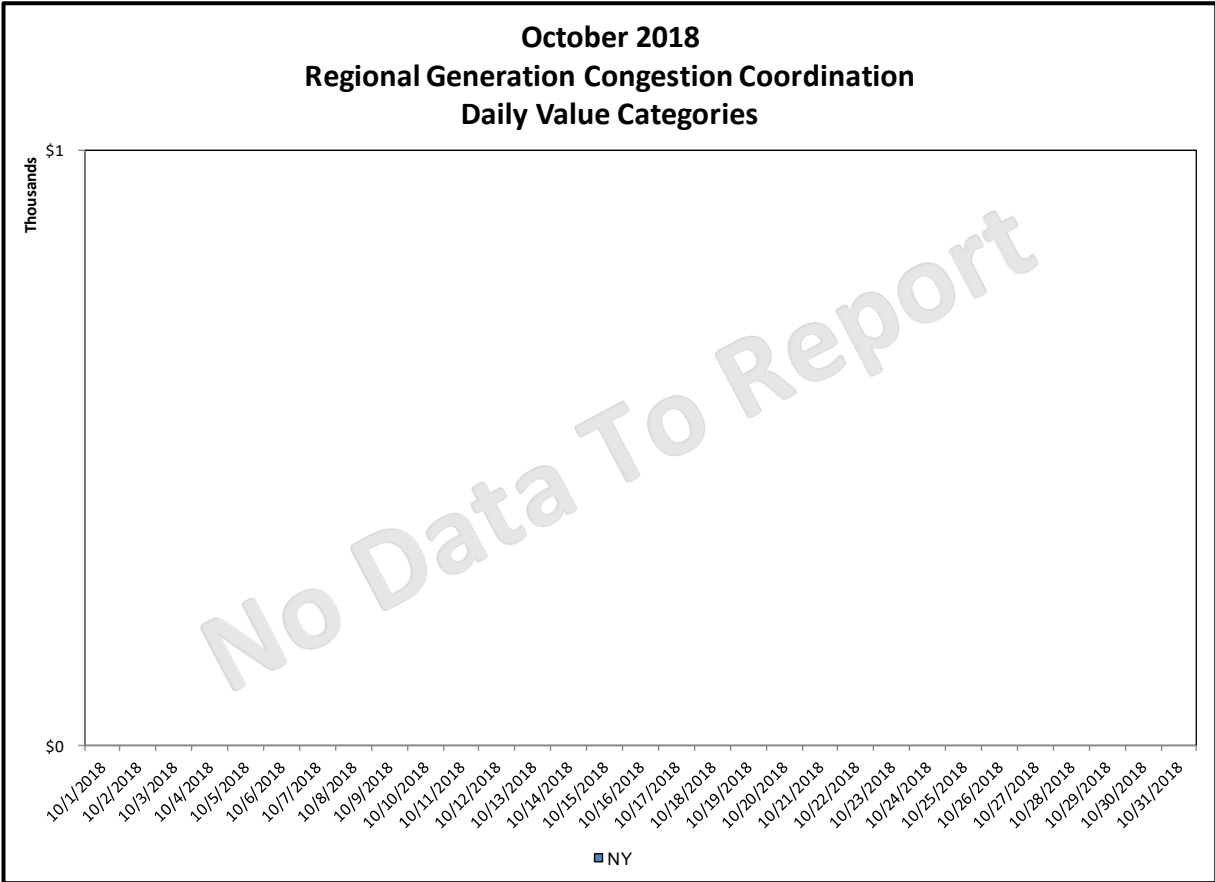
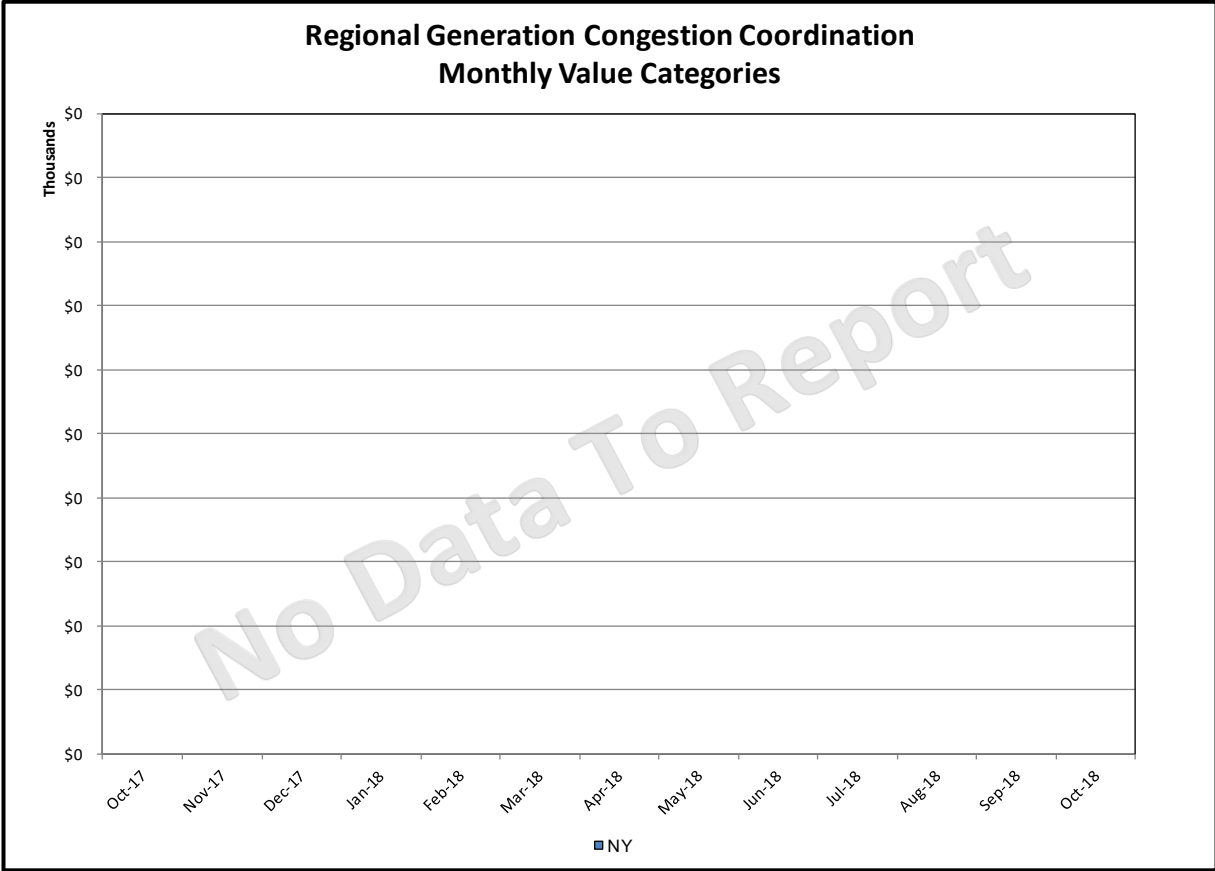


## Broader Regional Market Performance Metrics



**PAR Interconnection Congestion Coordination**

| <b><u>Category</u></b>    | <b><u>Description</u></b>  |
|---------------------------|--|
| <b>NY</b>                 | Represents the value NY realizes from Market-to-Market PAR Coordination when experiencing congestion. This is the estimated savings to NY for additional deliveries into NY  |
| <b>RECO</b>               | Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 5018. This is the estimated reduction in NYCA congestion due to the PJM delivery of RECO over Ramapo 5018.   |
| <b>M2M PAR Settlement</b> | Market-to-Market PAR Coordination settlement on coordinated flowgates. Through April 2017 this value was included in the NY and RECO categories. The positive sign convention indicates settlement to NY while the negative indicates settlement to PJM. |





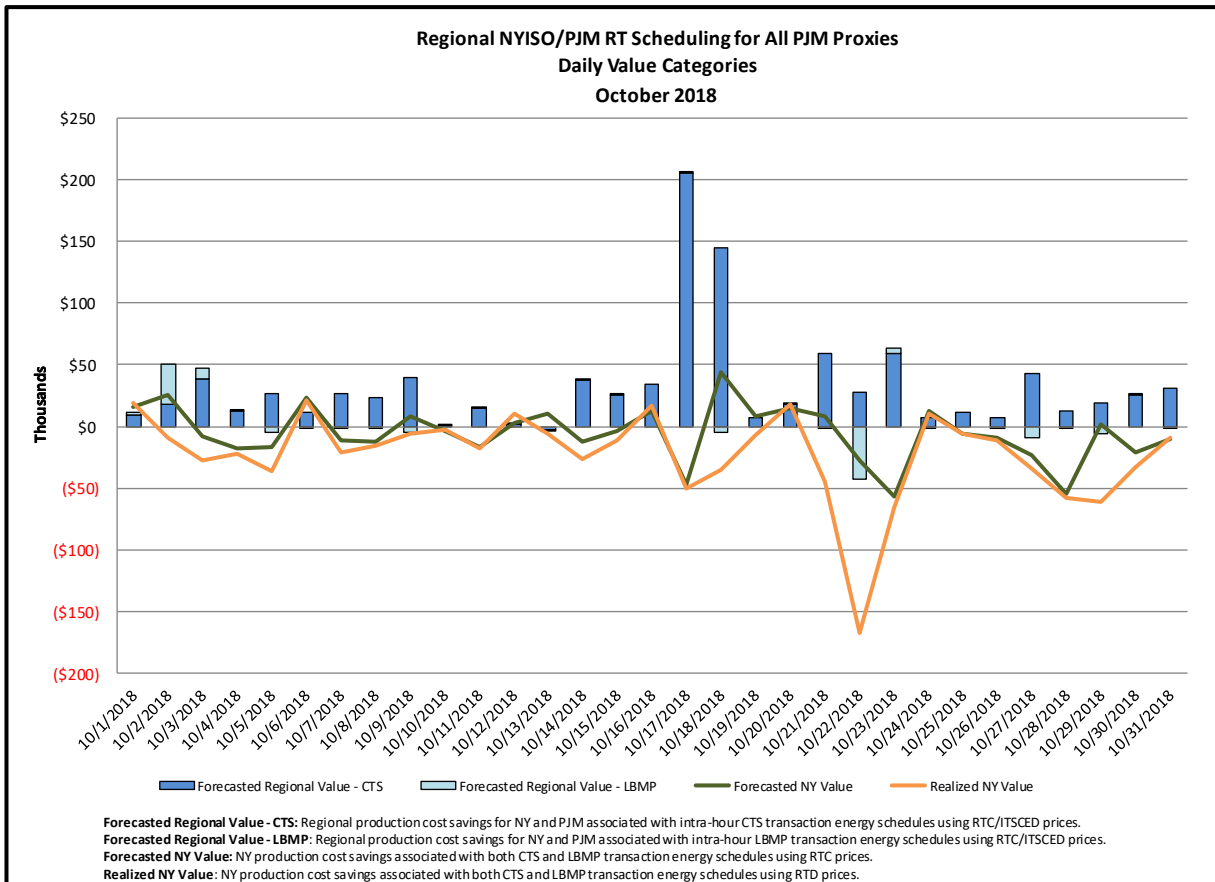
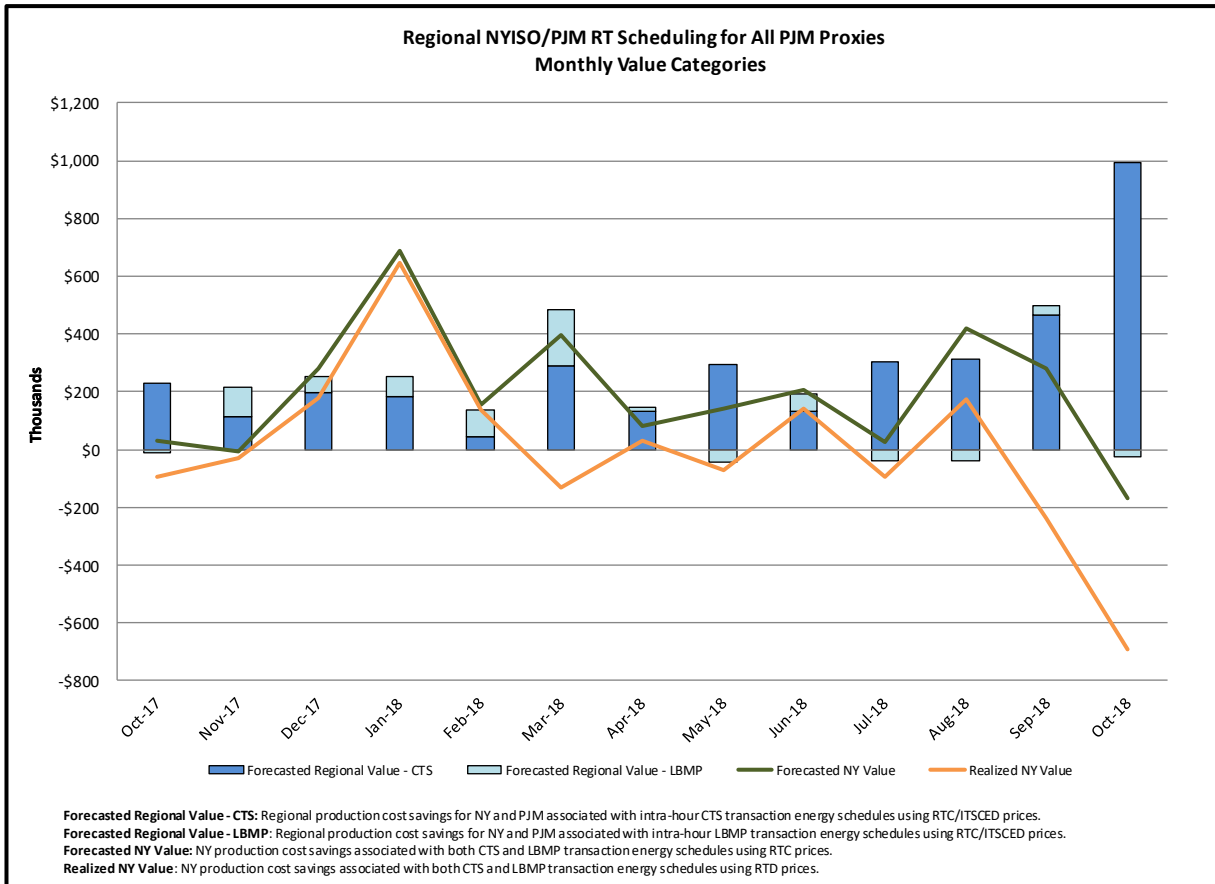
**Regional Generation Congestion Coordination**

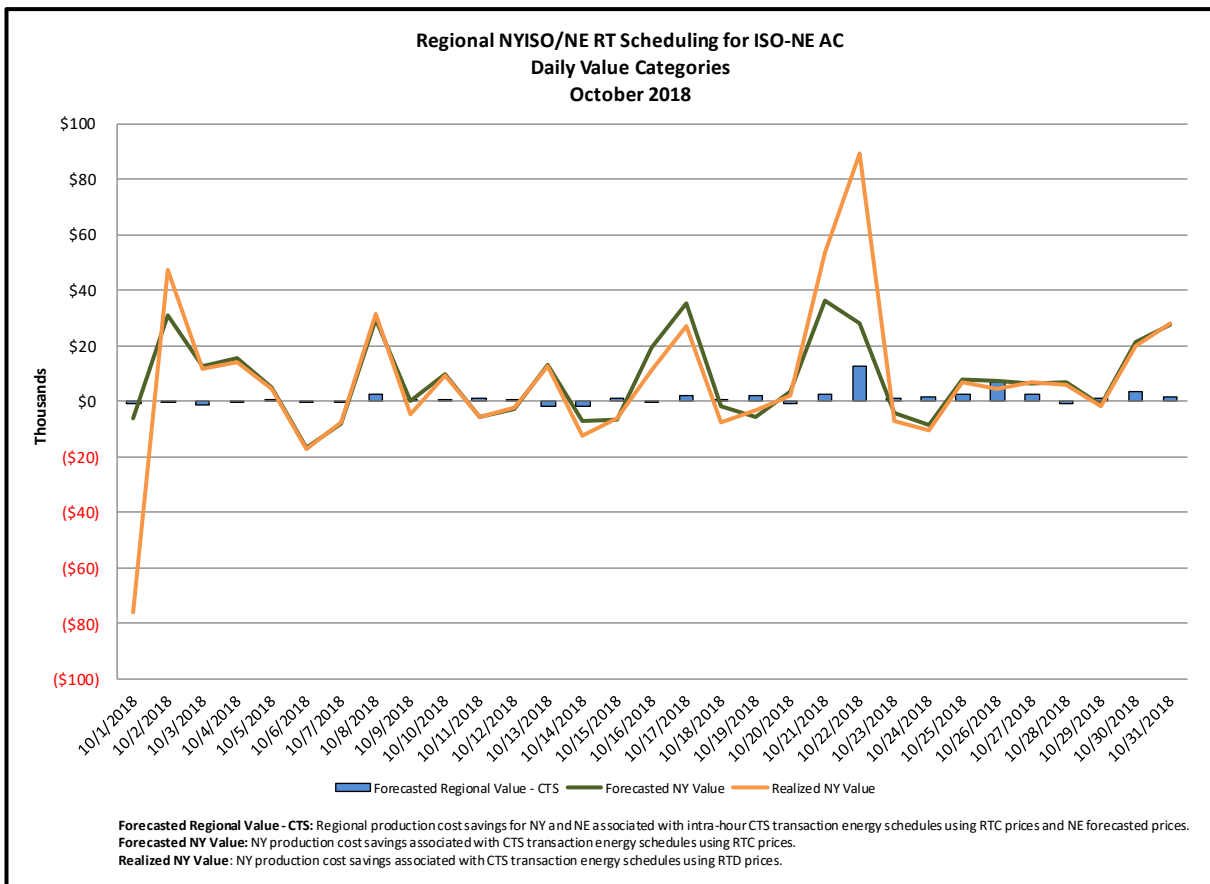
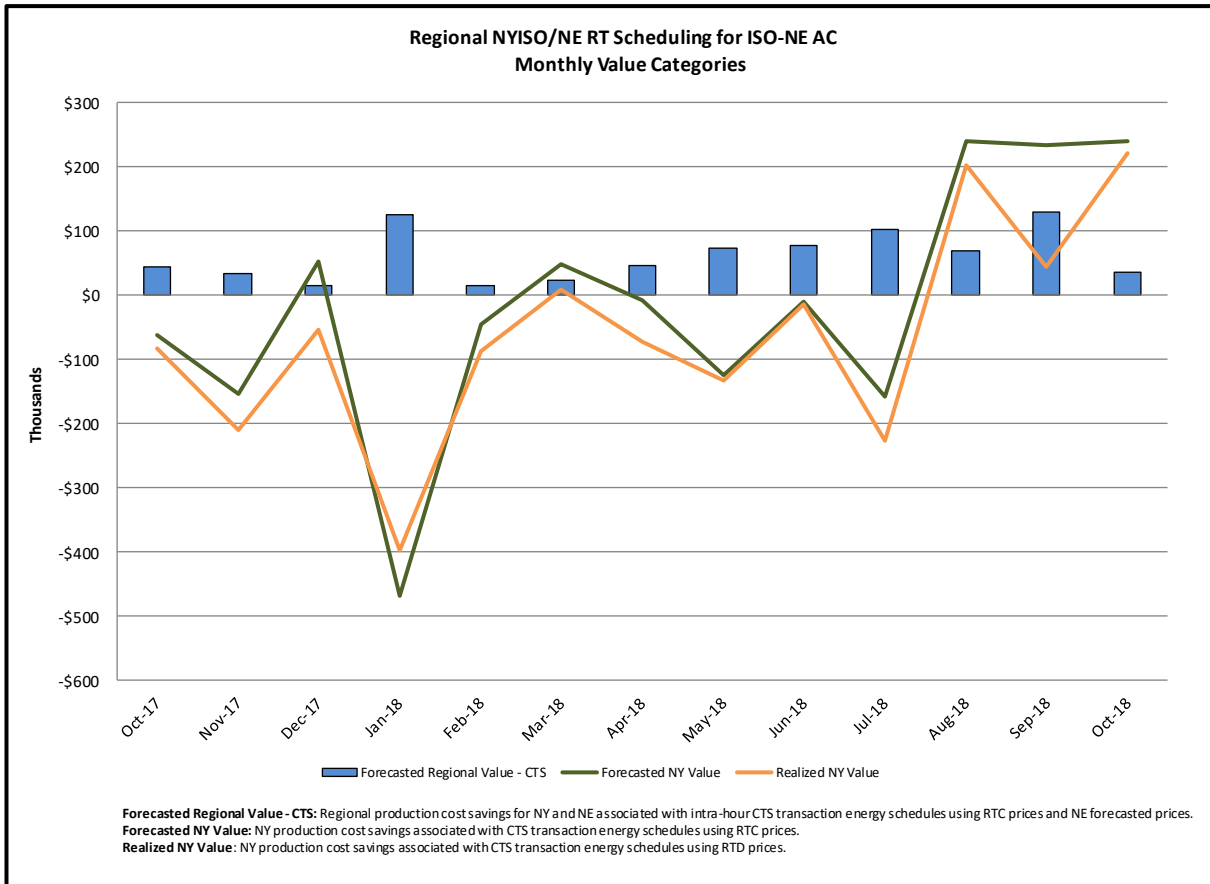
**Category**

**NY**

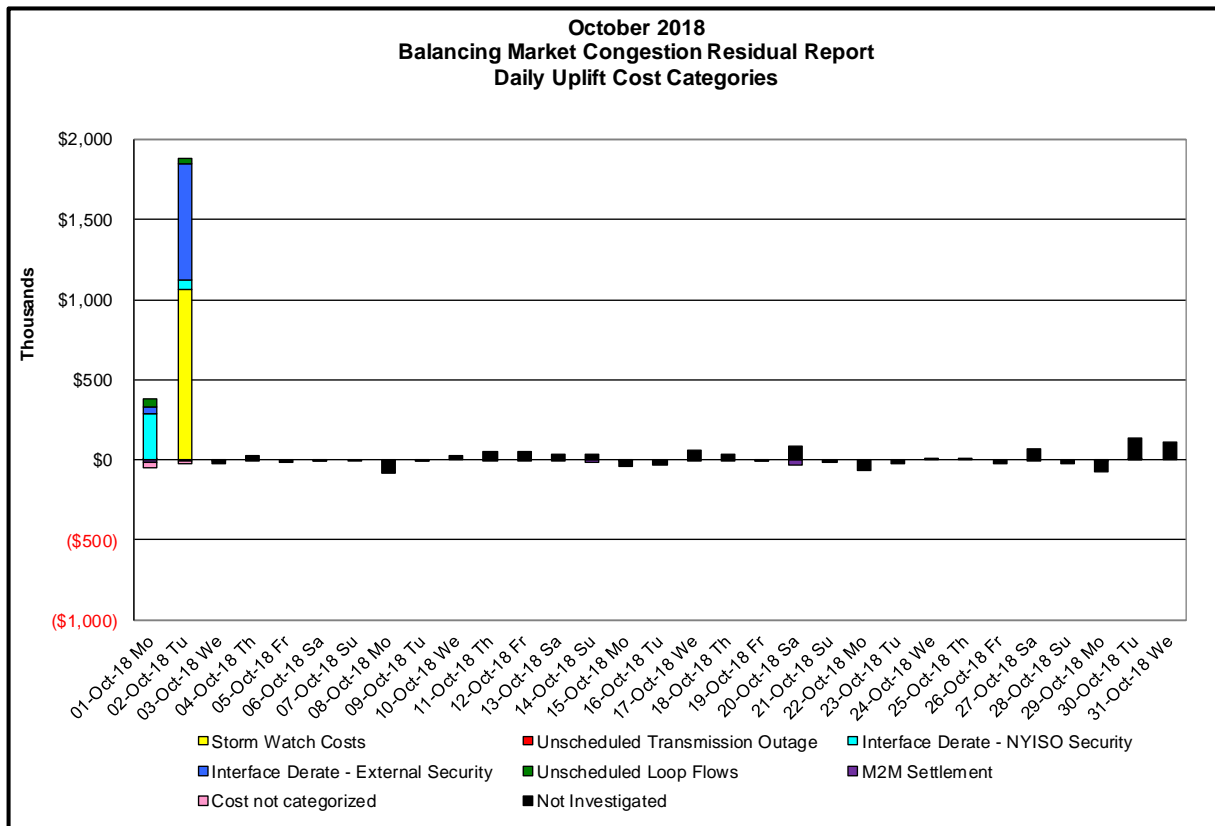
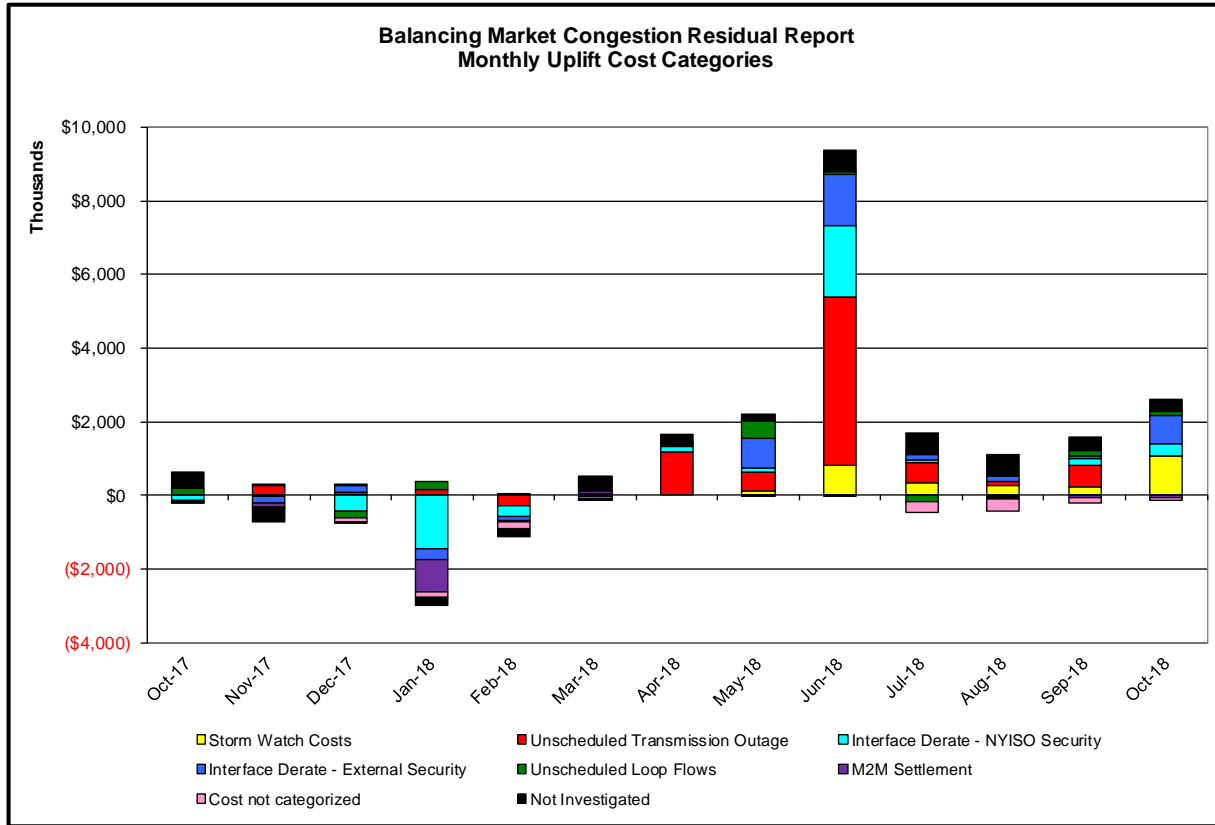
**Description**

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



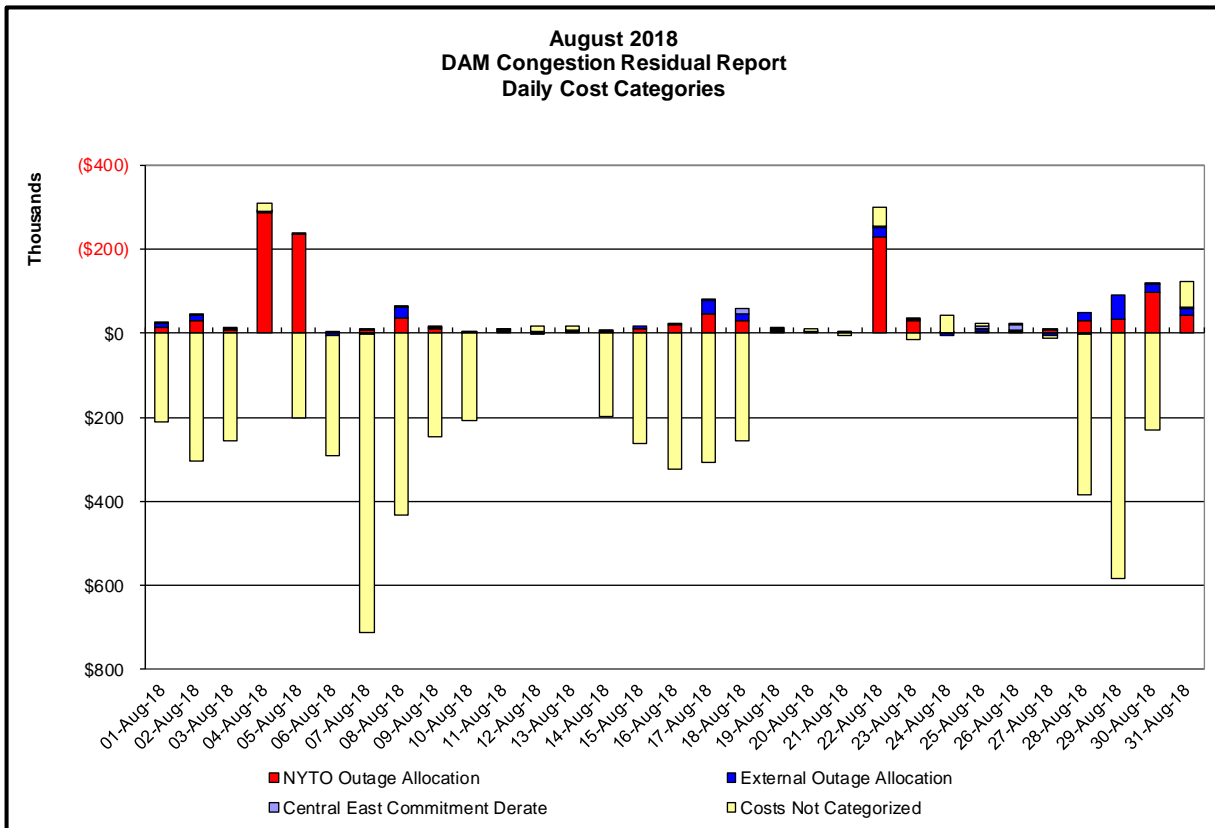
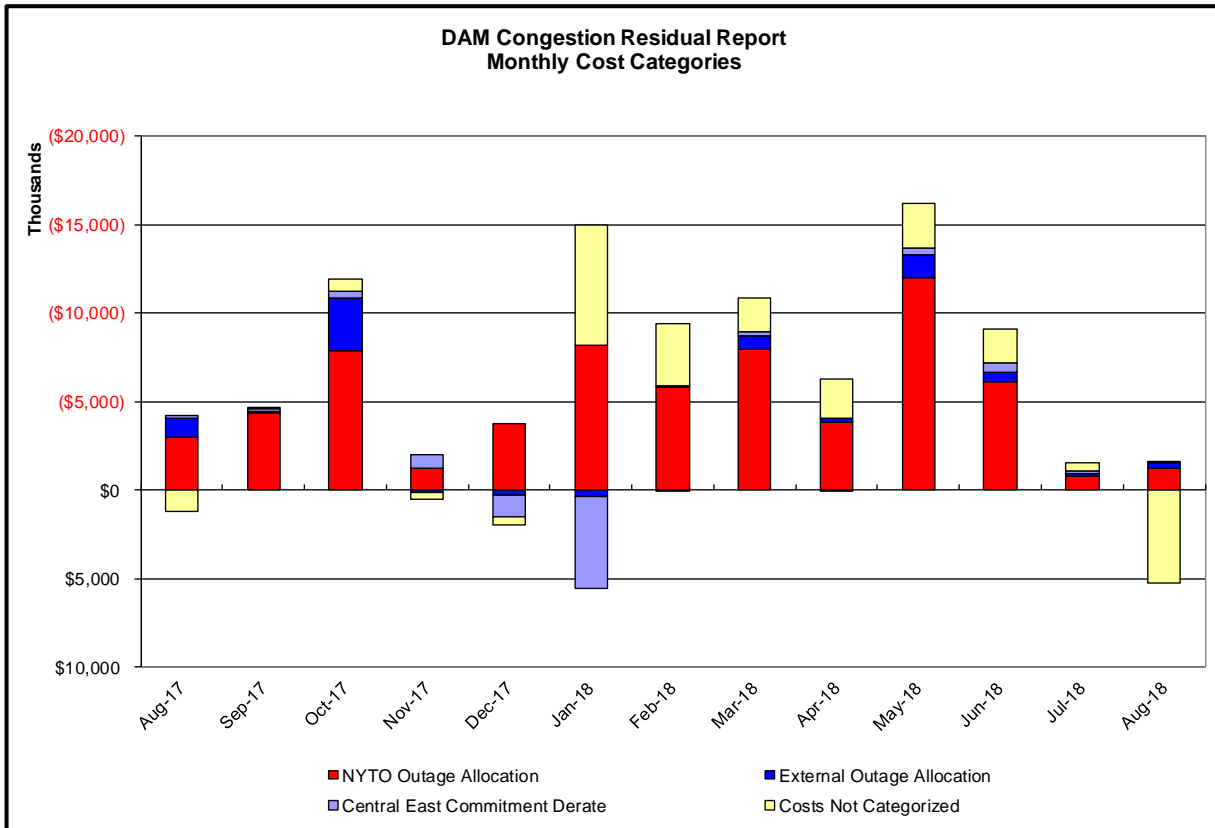
| Day's investigated in October: 1,2 |                 |          |  |
|------------------------------------|-----------------|----------|--|
| Event                              | Date (yyyymmdd) | Hours    | Description  |
|                                    | 10/1/2018       | 15       | Forced outage Gilboa-Leeds 345kV (#GL3), Gilboa-New Scotland 345kV (GNS-1)       |
|                                    | 10/1/2018       | 8        | NYCA DNI Ramp Limit  |
|                                    | 10/1/2018       | 8,12-21  | Derate Buchanan_S-Millwood 345kV (#W97) for I/o Buchanan_S-Millwood 345kV (#W98) |
|                                    | 10/1/2018       | 8,12-20  | Derate Central East  |
|                                    | 10/1/2018       | 12,13    | NE_AC DNI Ramp Limit   |
|                                    | 10/1/2018       | 15,20    | NE_AC-NY Scheduling Limit  |
|                                    | 10/1/2018       | 13,15,17 | Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East                    |
|                                    | 10/2/2018       | 15-23    | Thunder Storm Alert  |
|                                    | 10/2/2018       | 8,11-16  | Derate Buchanan_S-Millwood 345kV (#W97) for I/o Buchanan_S-Millwood 345kV (#W98) |
|                                    | 10/2/2018       | 8,12,16  | Derate Central East  |
|                                    | 10/2/2018       | 11,12    | Derate Dunwoodie-Shore Rd 345kV (#Y50) I/o SCB:SPBK(RNS2):Y49&M29&Y49_ST         |
|                                    | 10/2/2018       | 10       | Uprate Goethals-Gowanus 345kV (#25/#26)  |
|                                    | 10/2/2018       | 10       | Uprate Motthaven-Dunwoodie 345kV (#72)   |
|                                    | 10/2/2018       | 10,18,19 | NE_AC-NY Scheduling Limit  |
|                                    | 10/2/2018       | 18,19    | NE_AC DNI Ramp Limit   |
|                                    | 10/2/2018       | 23       | PJM_AC-NY Scheduling Limit   |
|                                    | 10/2/2018       | 8,12,16  | Lake Erie Circulation, DAM-RTM exceeds +/-125MW; 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 Lake Erie Loop Flows exceeding +/- 125 MW |
| M2M Settlement                       | Market-wide            | Settlement result inclusive of coordinated redispatch and Ramapo flowgates                      |  |

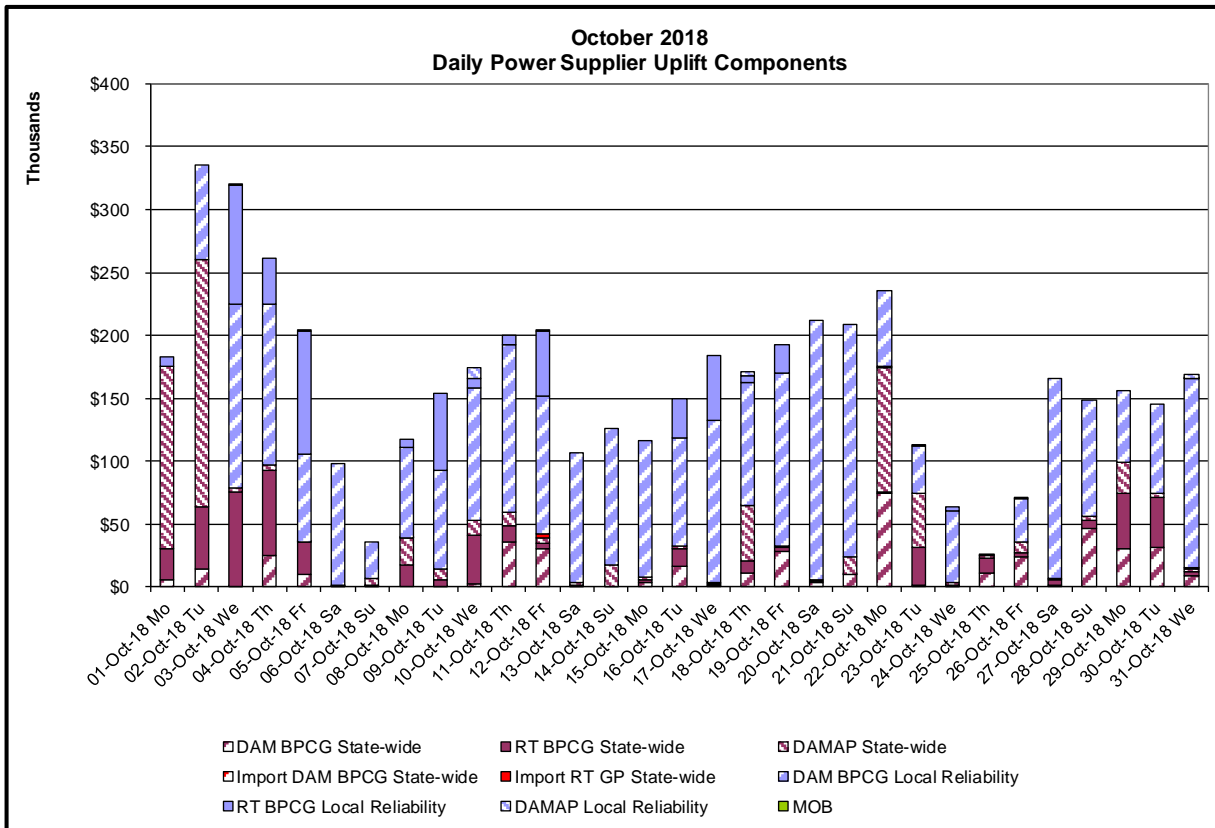
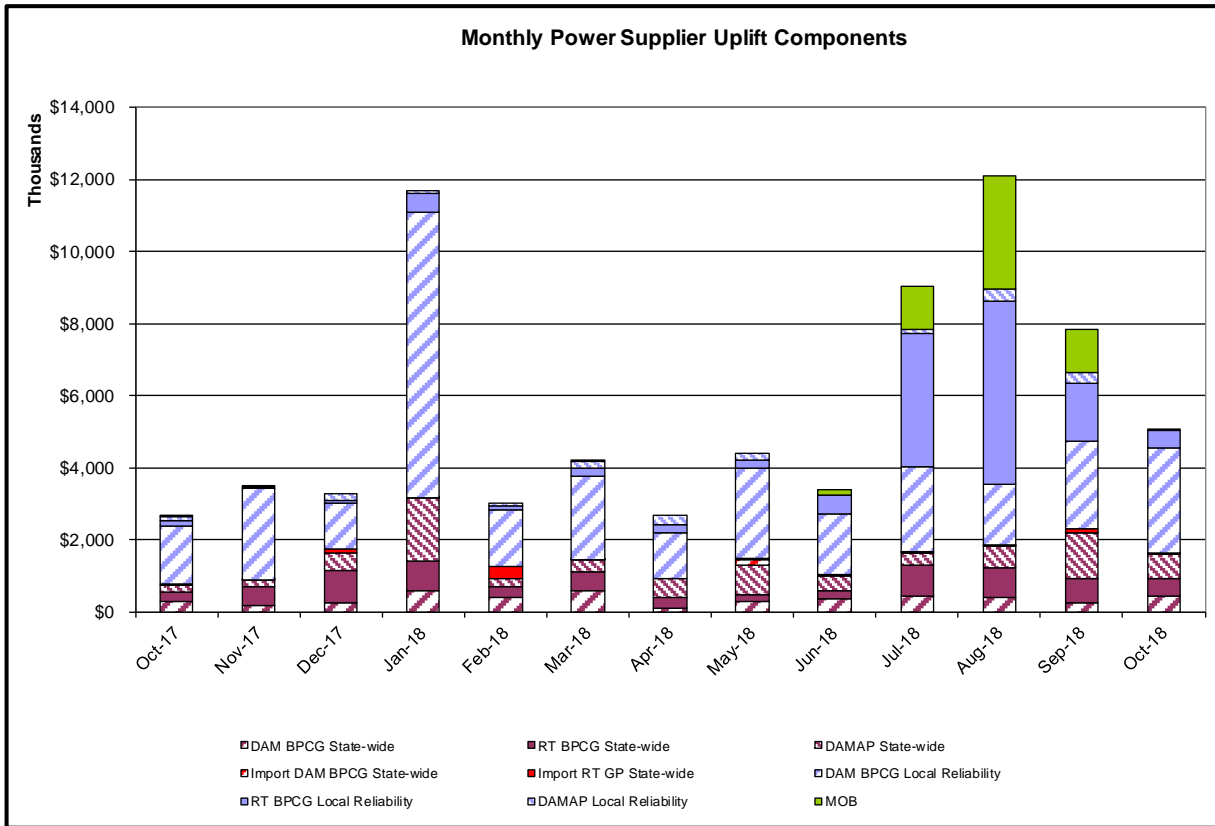
**Monthly Balancing Market Congestion Report Assumptions/Notes**

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

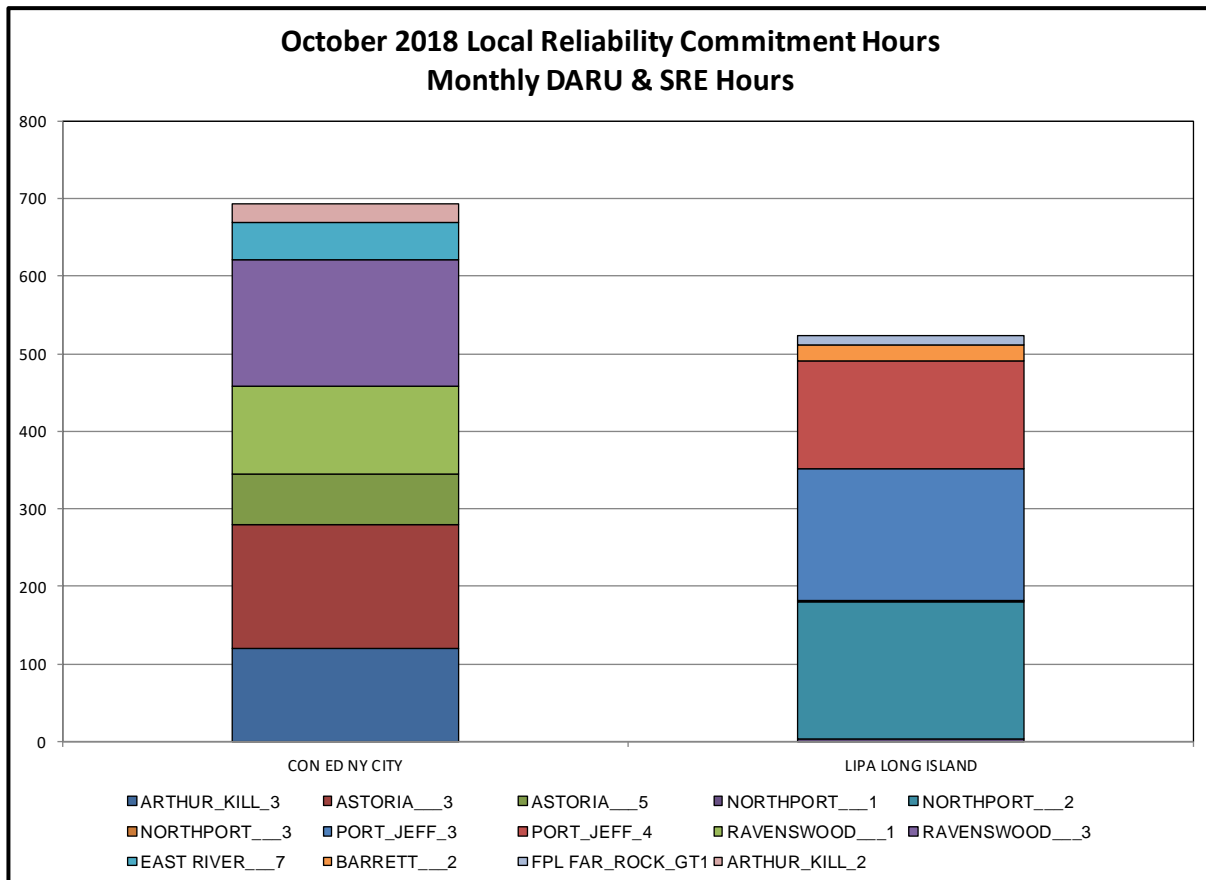
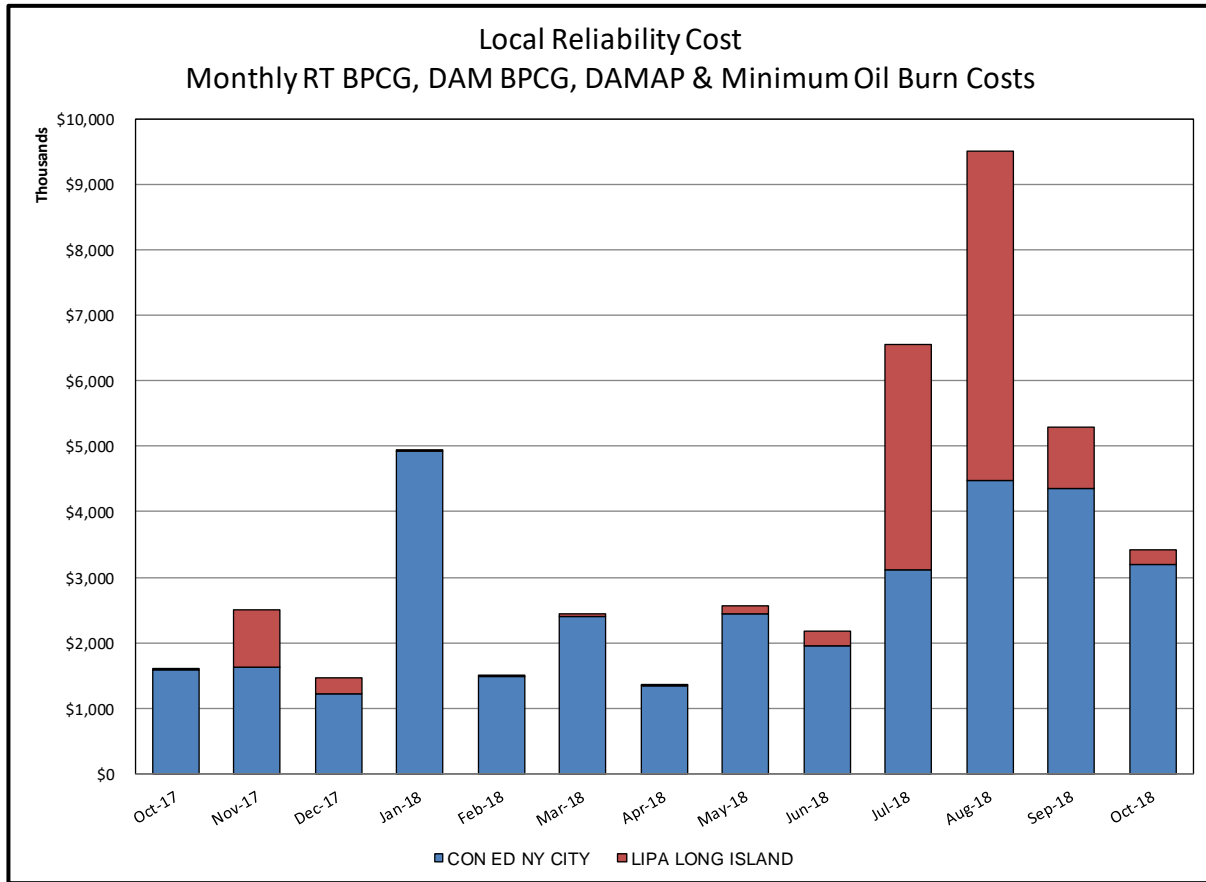


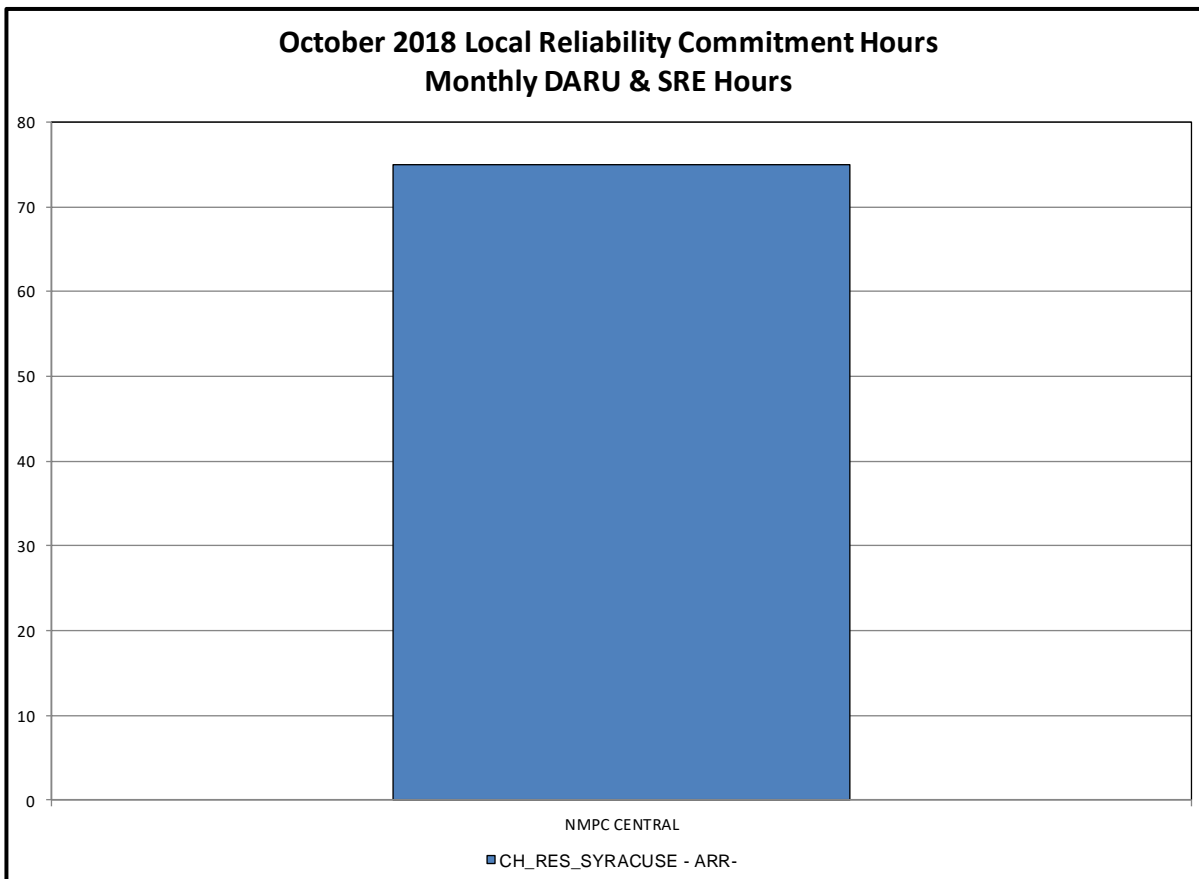
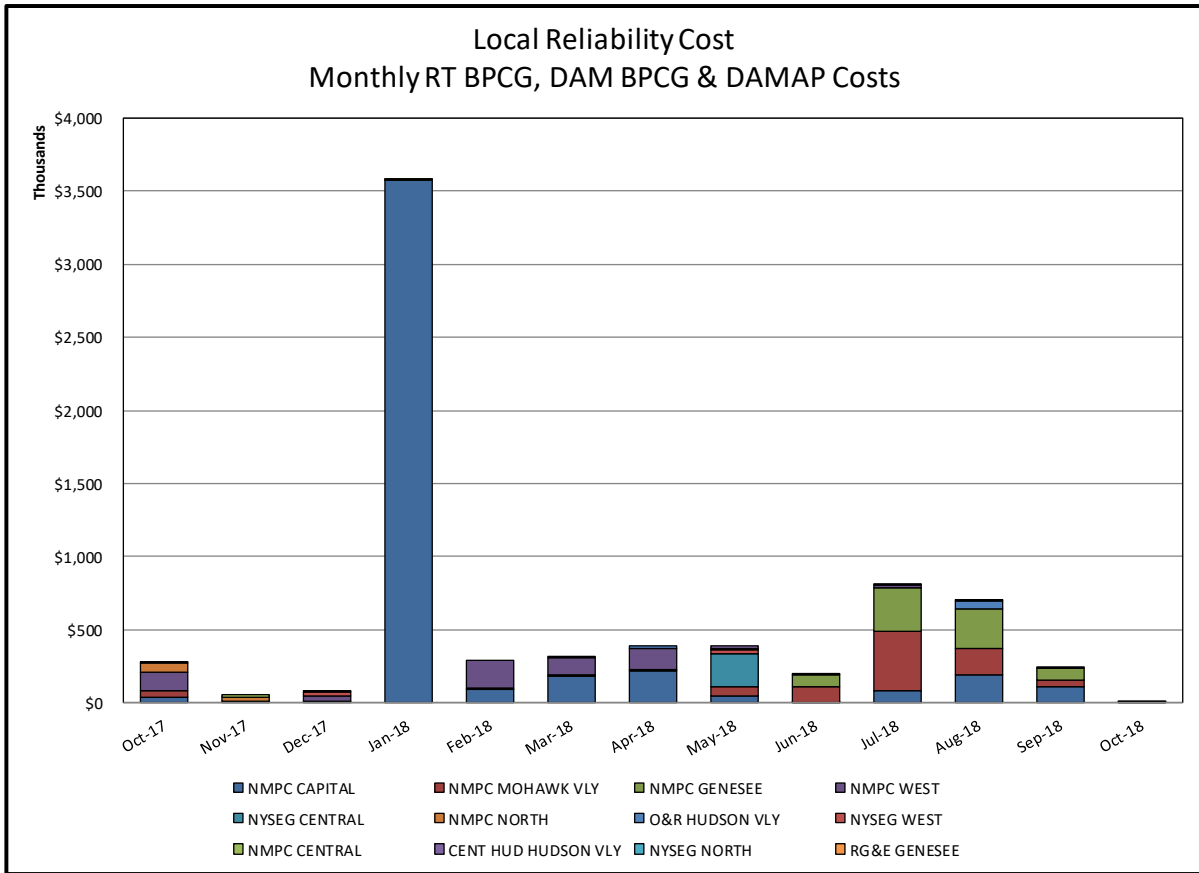
**Day-Ahead Market Congestion Residual Categories**

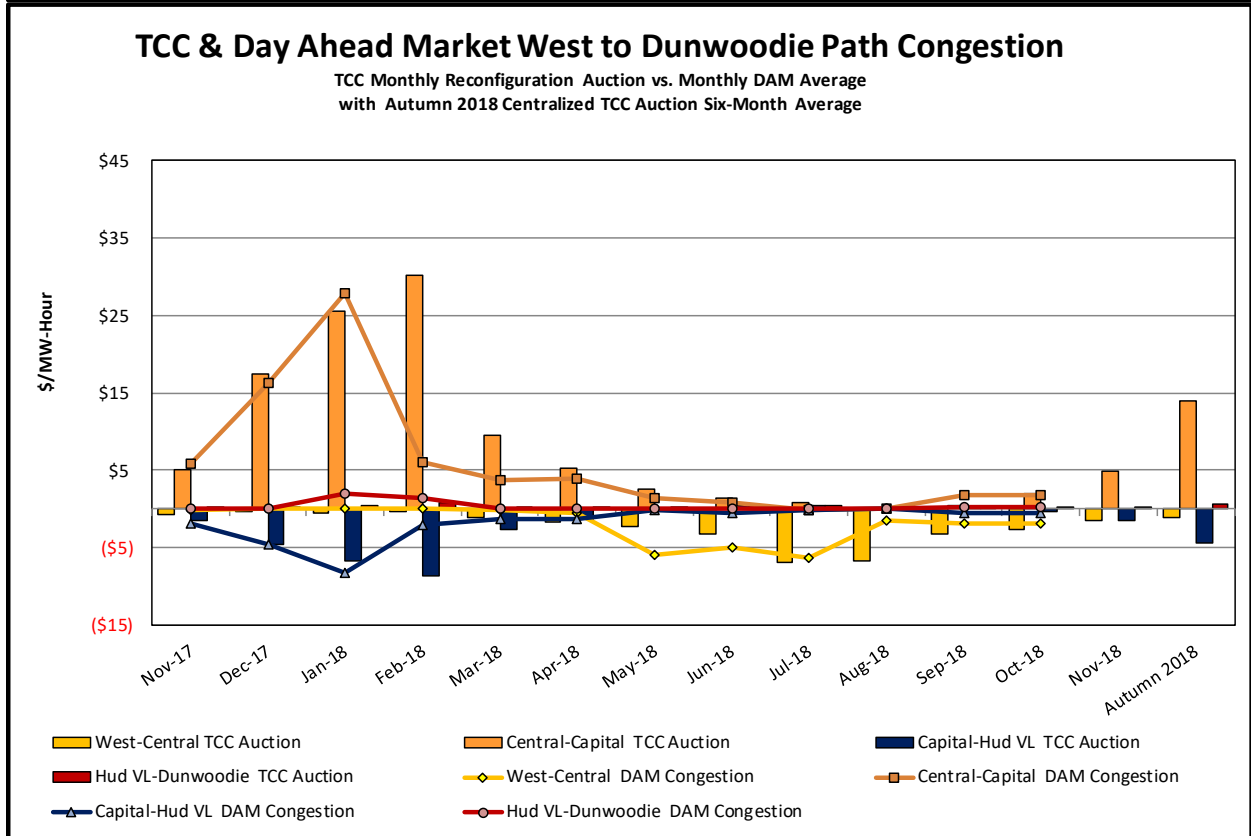
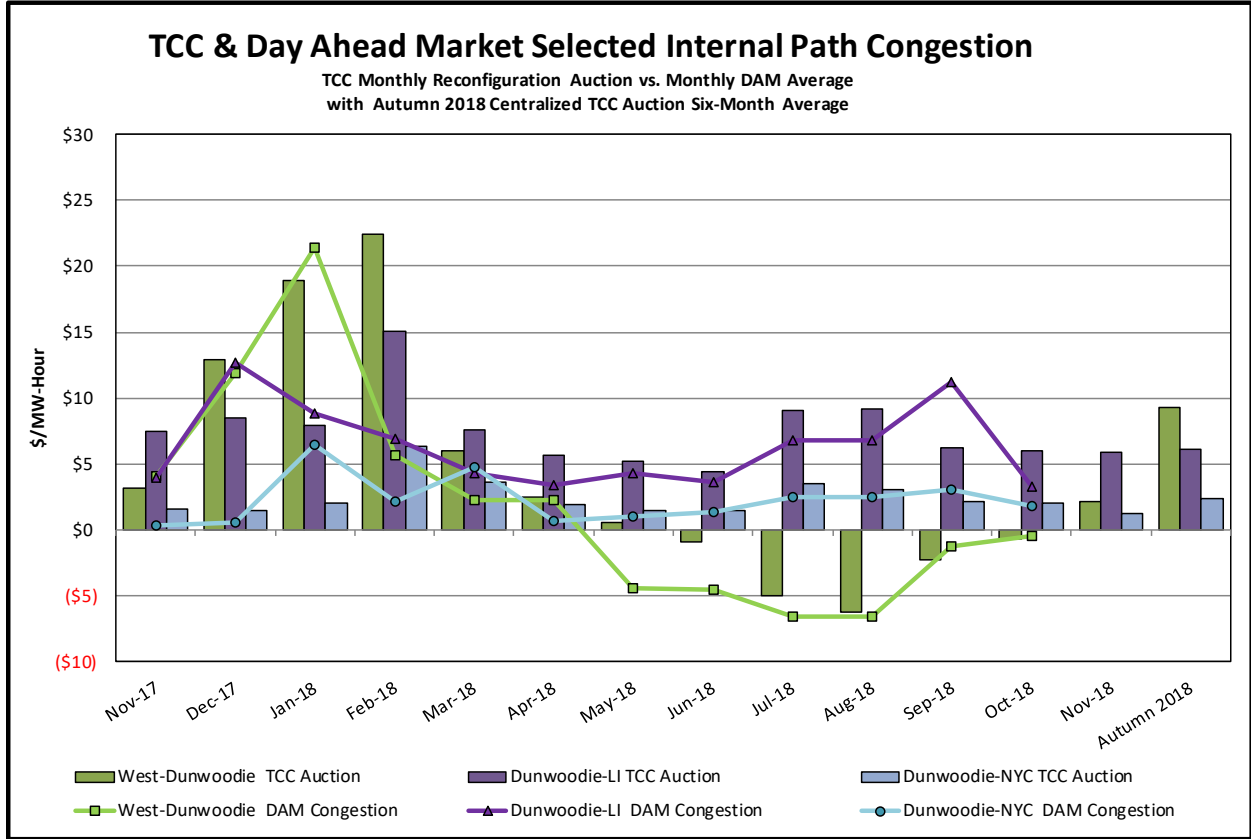
| <u>Category</u>                | <u>Cost Assignment</u>              | <u>Events Types</u>  | <u>Event Examples</u>  |
|--------------------------------|-------------------------------------|--|--|
| NYTO Outage Allocation         | Responsible TO                      | Direct allocation to NYTO's 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. |  |





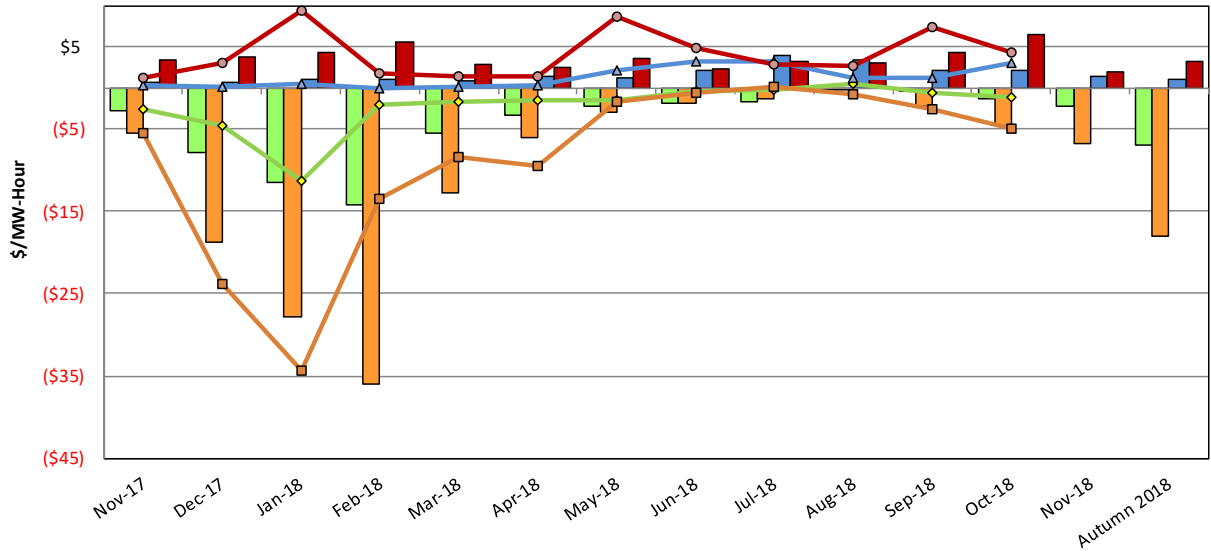






### TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average  
with Autumn 2018 Centralized TCC Auction Six-Month Average



■ PJM-Central TCC Auction     ■ NE-Central TCC Auction     ■ OH-Central TCC Auction     ■ HQ-Central TCC Auction  
◆ PJM-Central DAM Congestion     ◆ NE-Central DAM Congestion     ▲ OH-Central DAM Congestion     ○ HQ-Central DAM Congestion

