

Operations Performance Metrics Monthly Report



December 2010 Report

Operations & Reliability Department New York Independent System Operator

Prepared by NYISO Operations Analysis and Services, based on settlements initial invoice data obtained on or before January 12.

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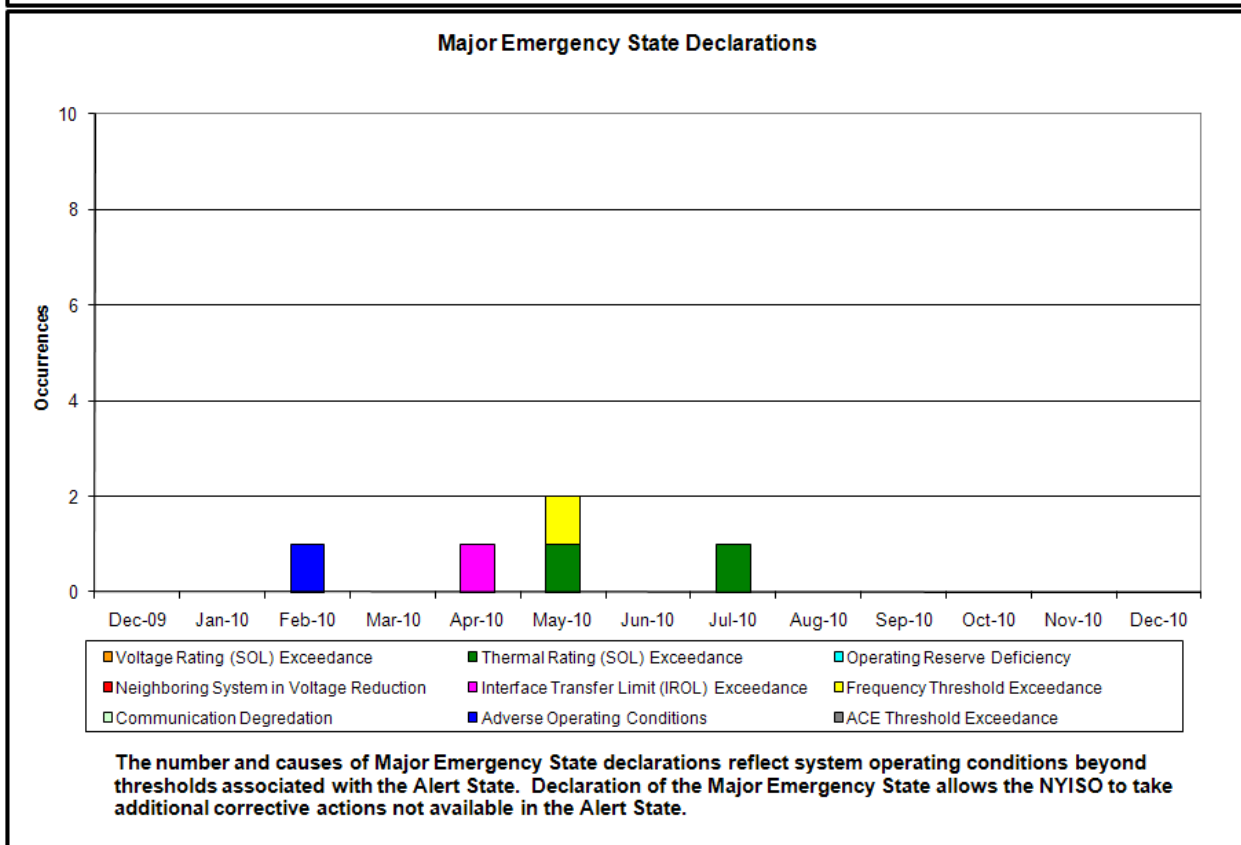
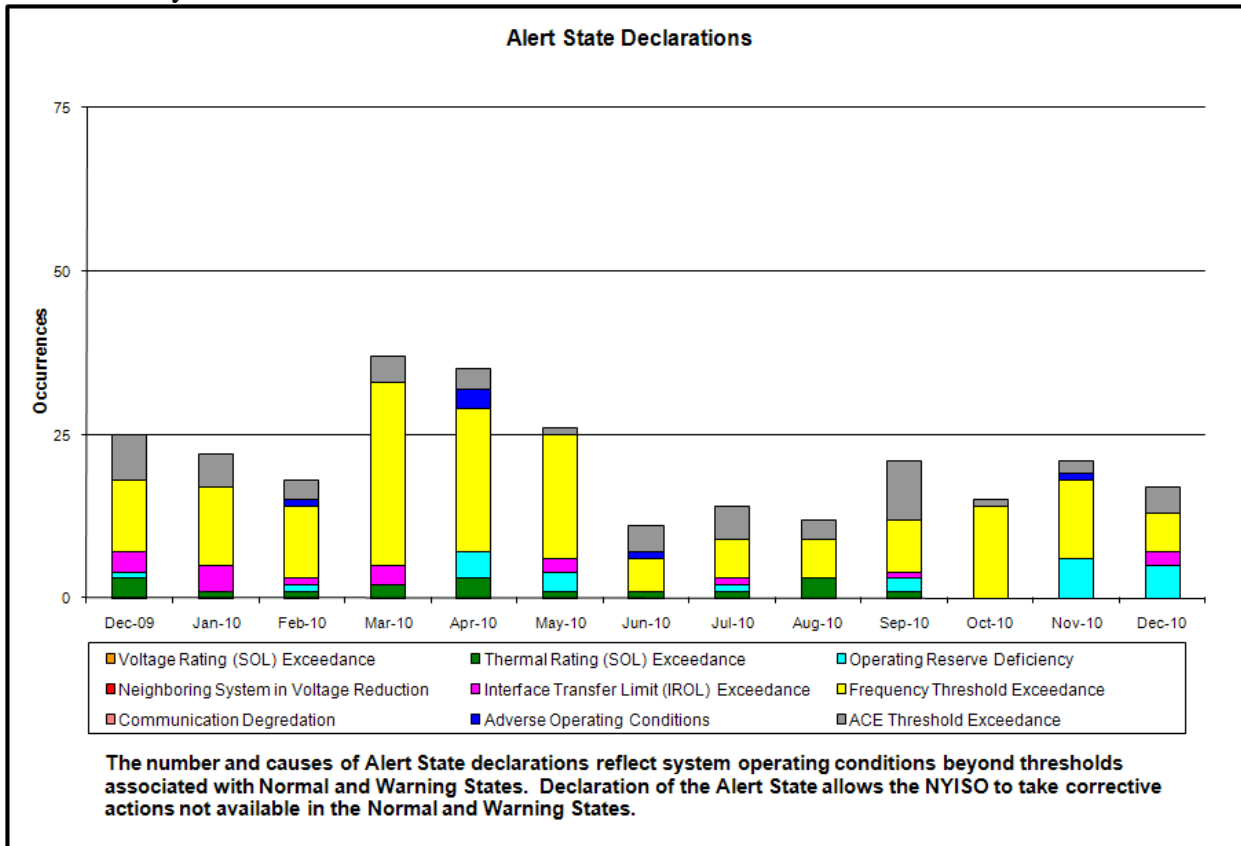
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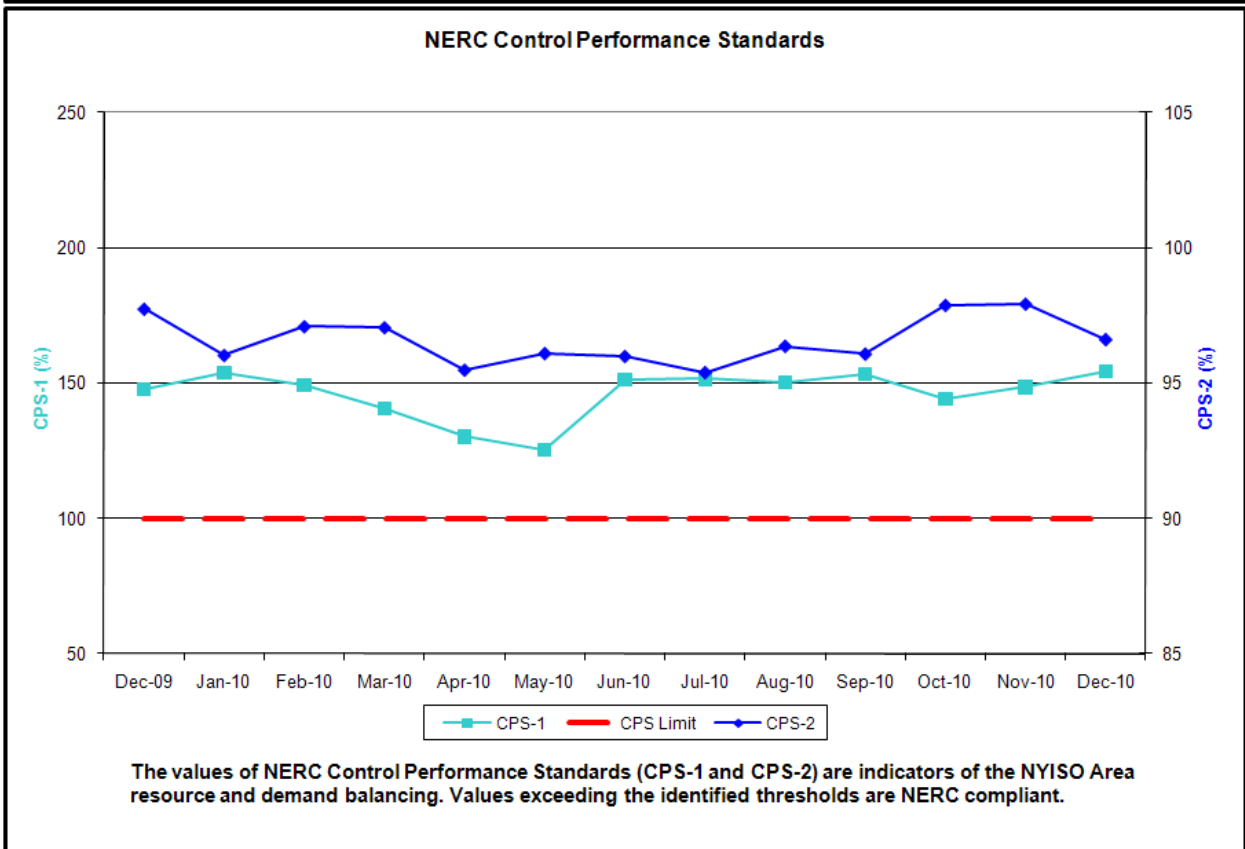
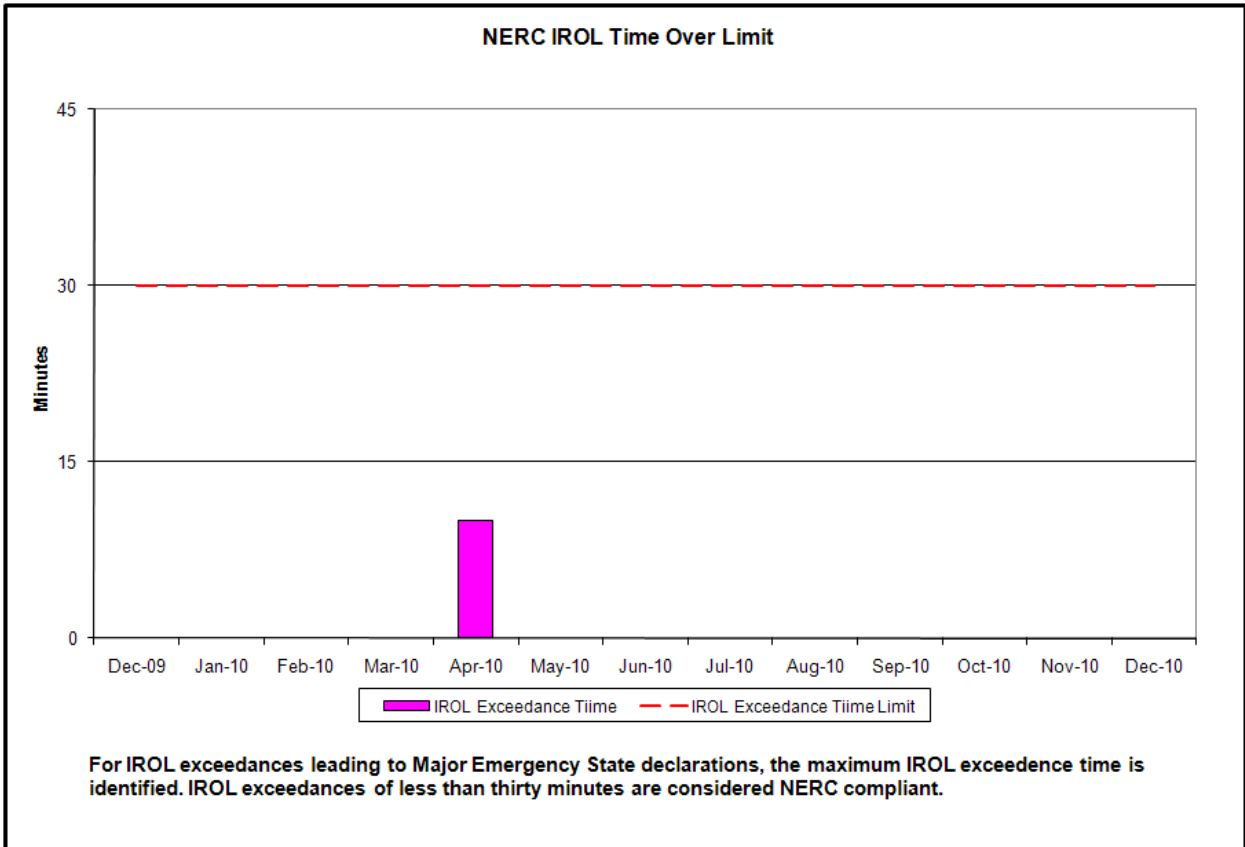
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December 2010 Operations Performance Highlights

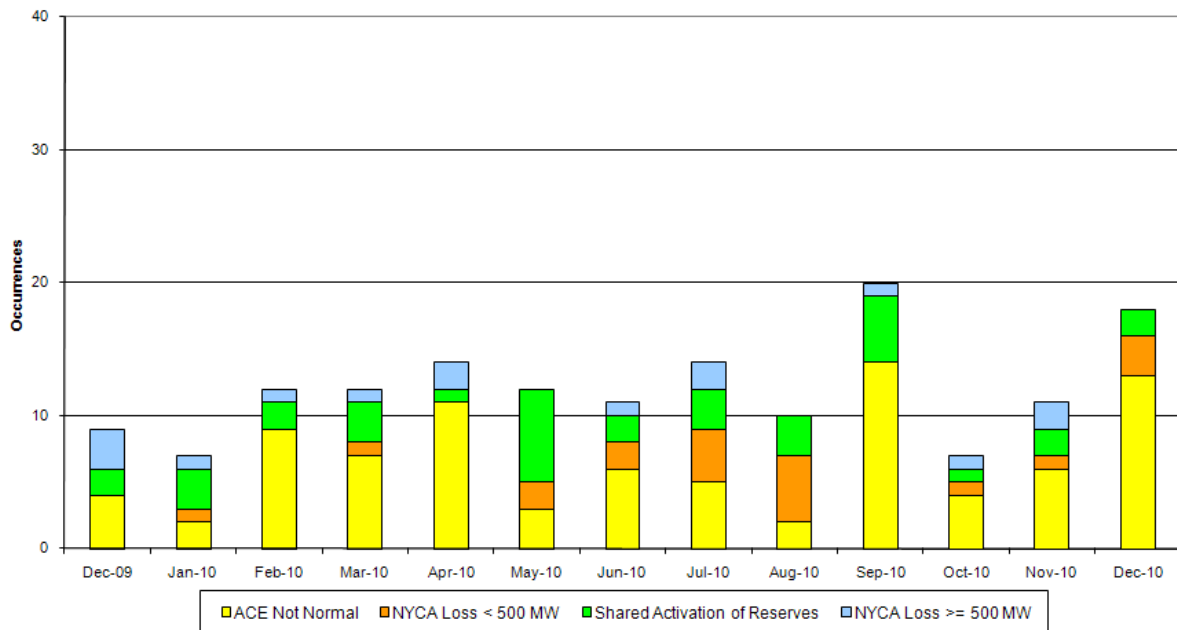
- Peak load of 24,654 MW occurred on December 14 for hour beginning 17
- TLR Level 3 declared for 20 hours
- The Central East congestion has been impacted by an out-of-service Oswego Complex automatic voltage regulator (AVR). Out-of-service Oswego Complex AVR conditions are now indentified in NYISO Transfer Limitations report.
- Beck-Niagara outages to support Niagara DAM work have concluded

- Reliability Performance Metrics



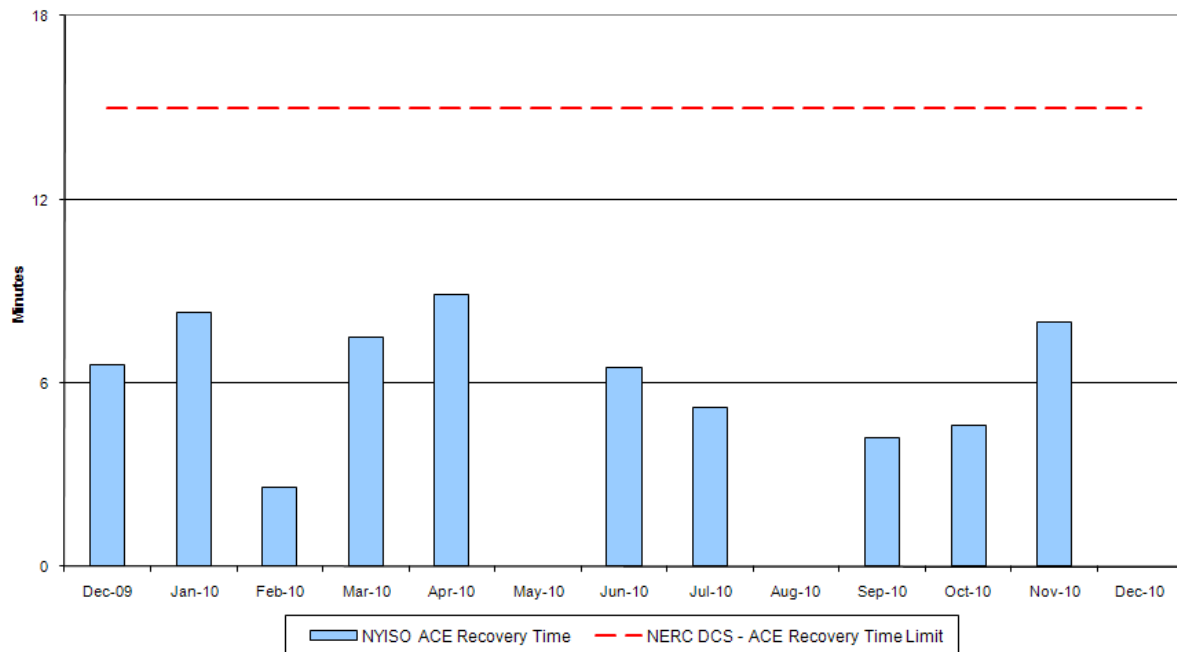


Reserve Activations



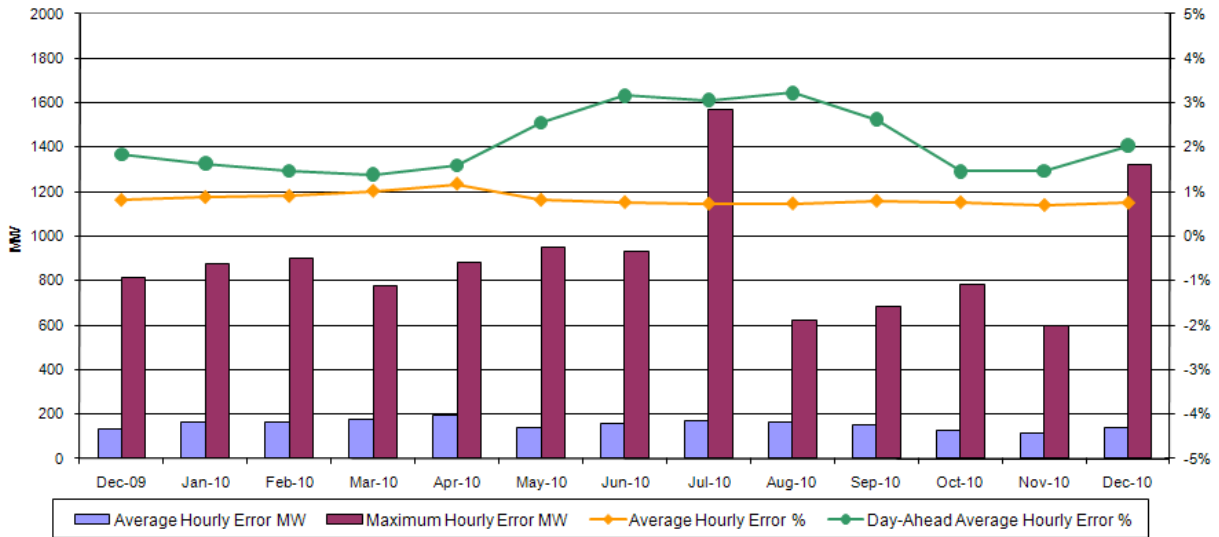
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Shared Activation of Reserves) by activating an immediate resource and demand balancing operation.

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

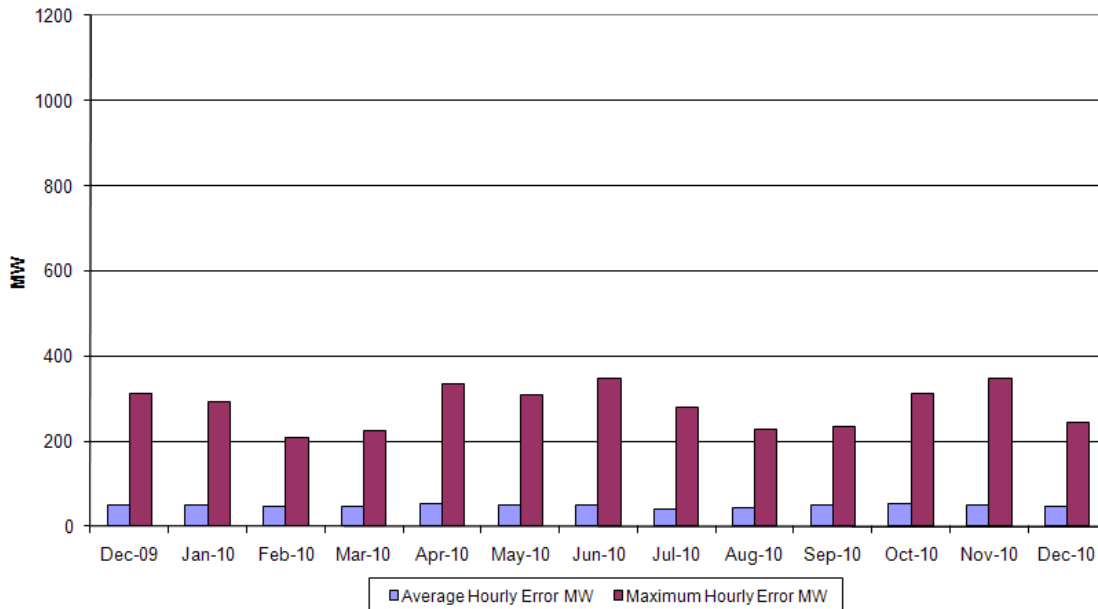


Hourly Error MW - Absolute value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.

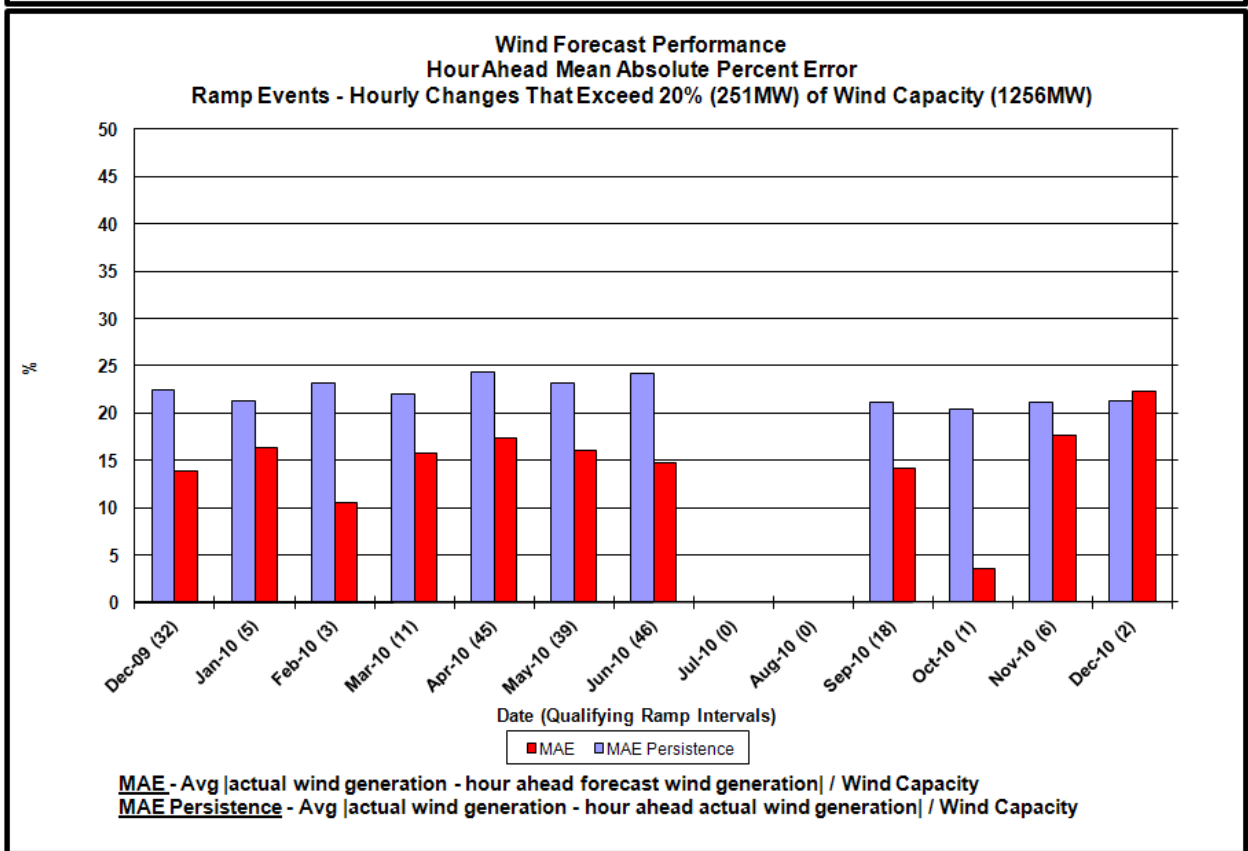
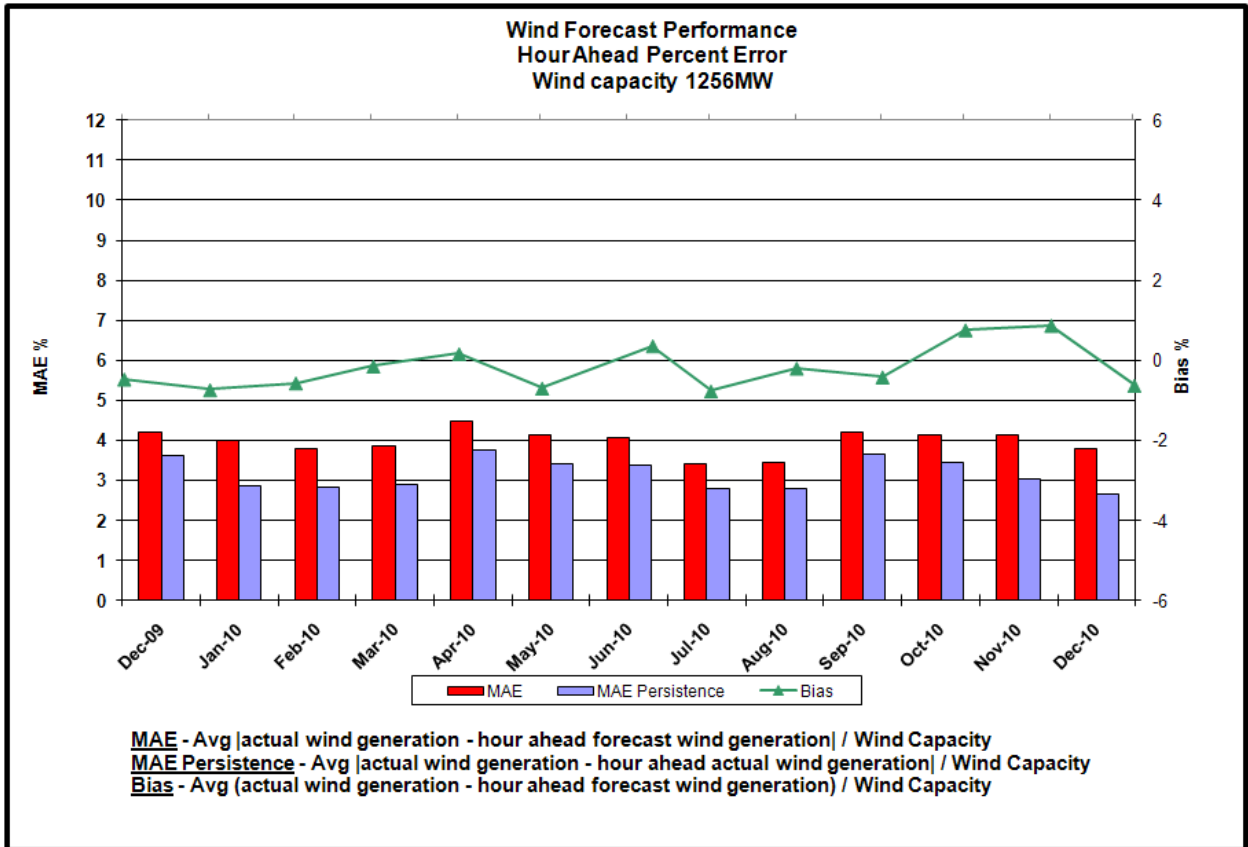
Average Hourly Error % - Average value of the ratio of hourly average error magnitude to hourly average actual load demand.

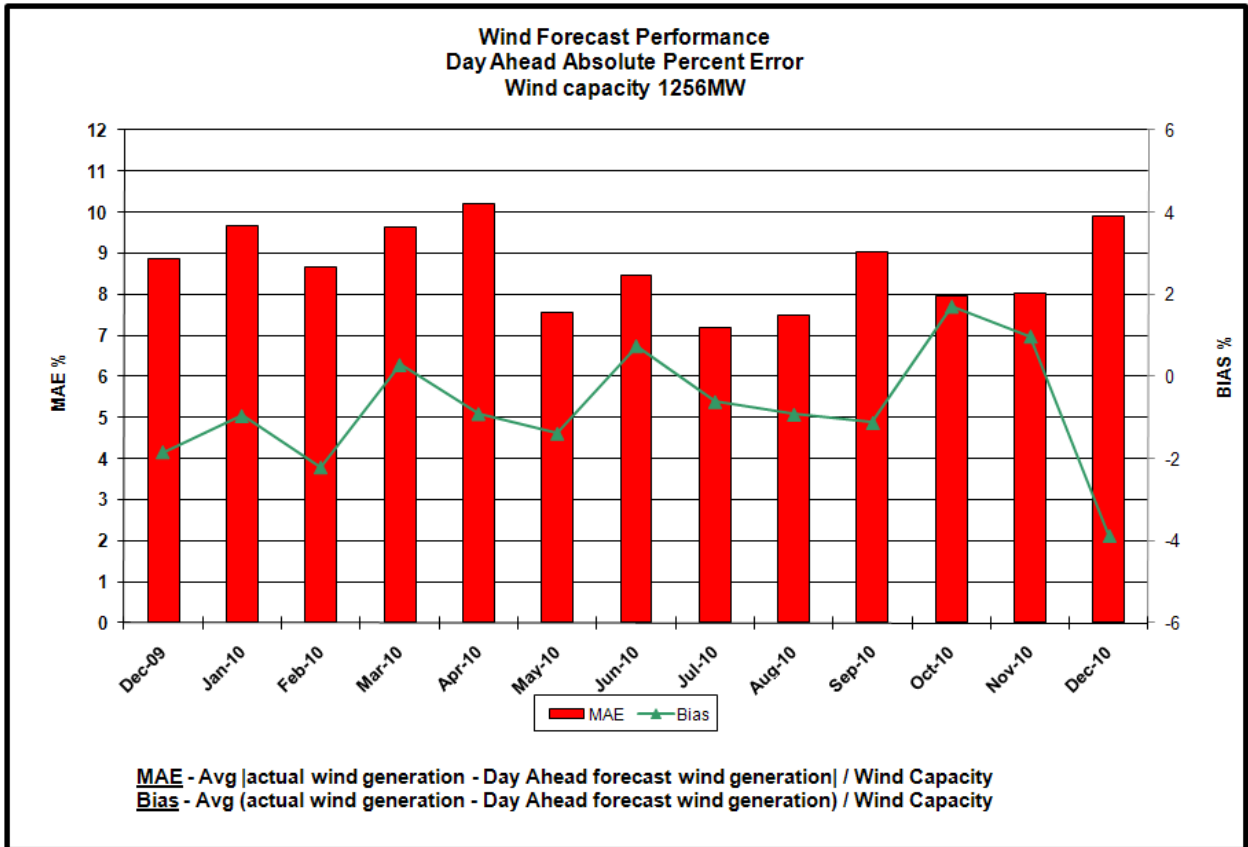
Day-Ahead Average Hourly Error % - Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.

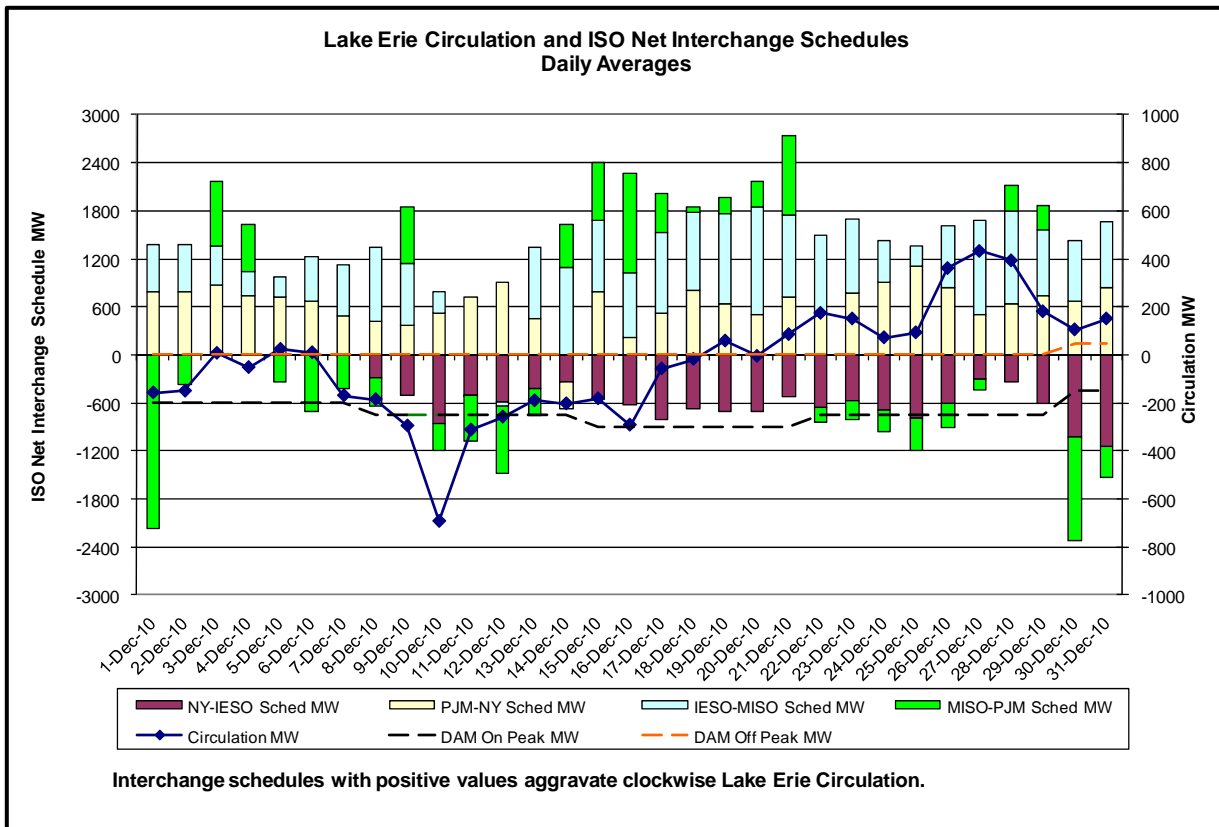
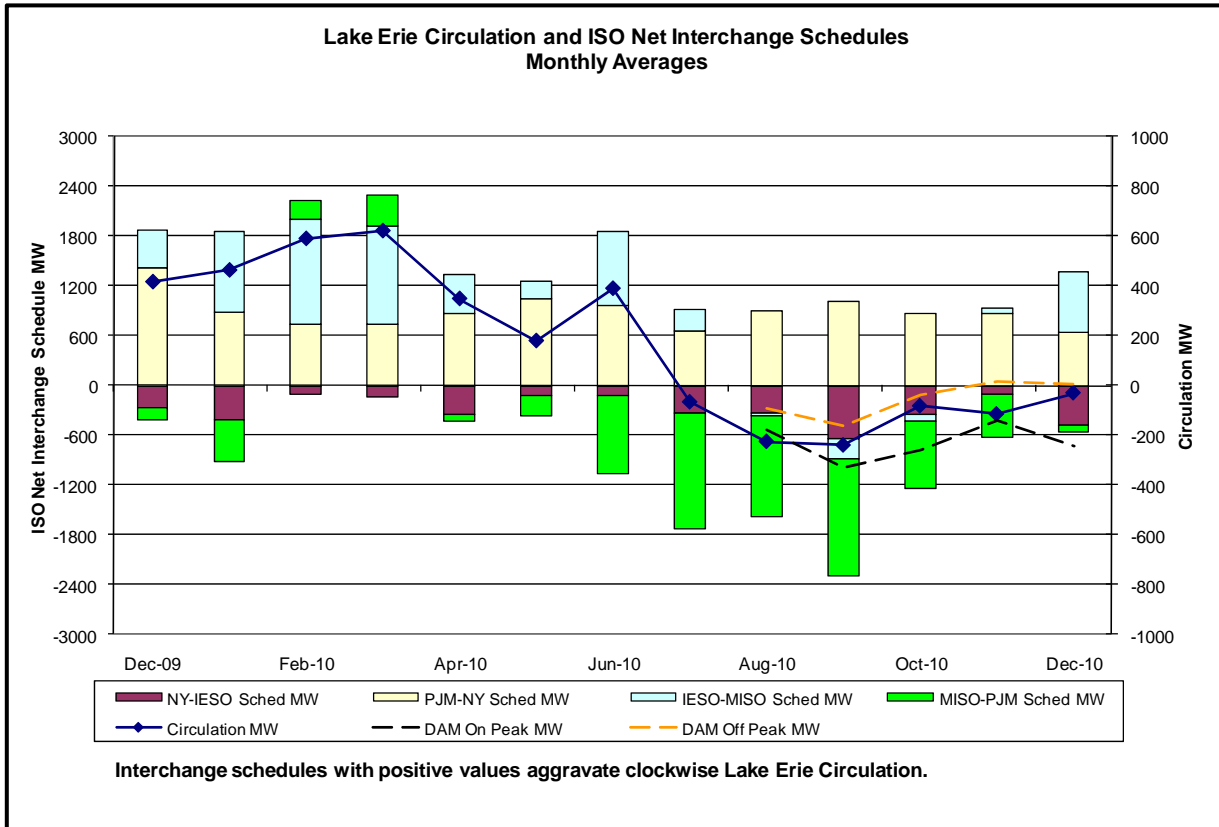
Wind Forecast Performance Hour Ahead MW Error



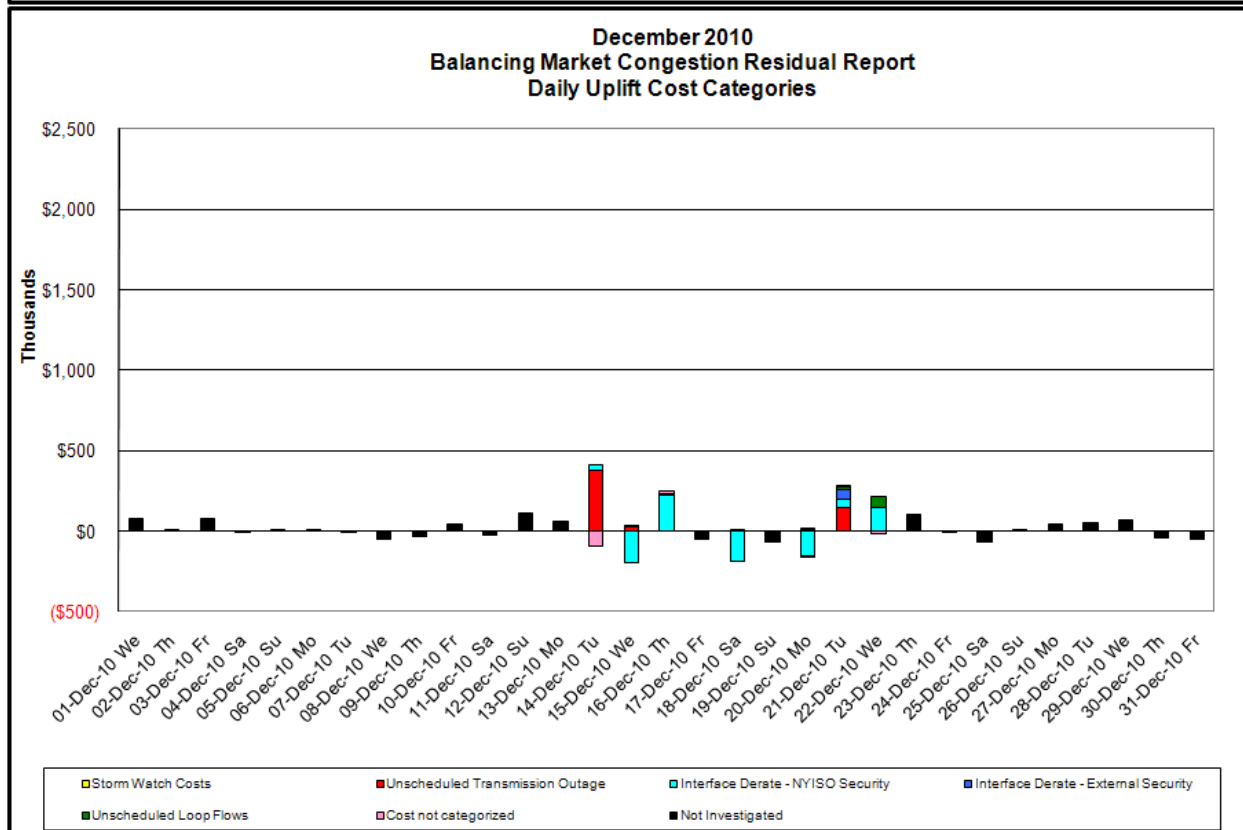
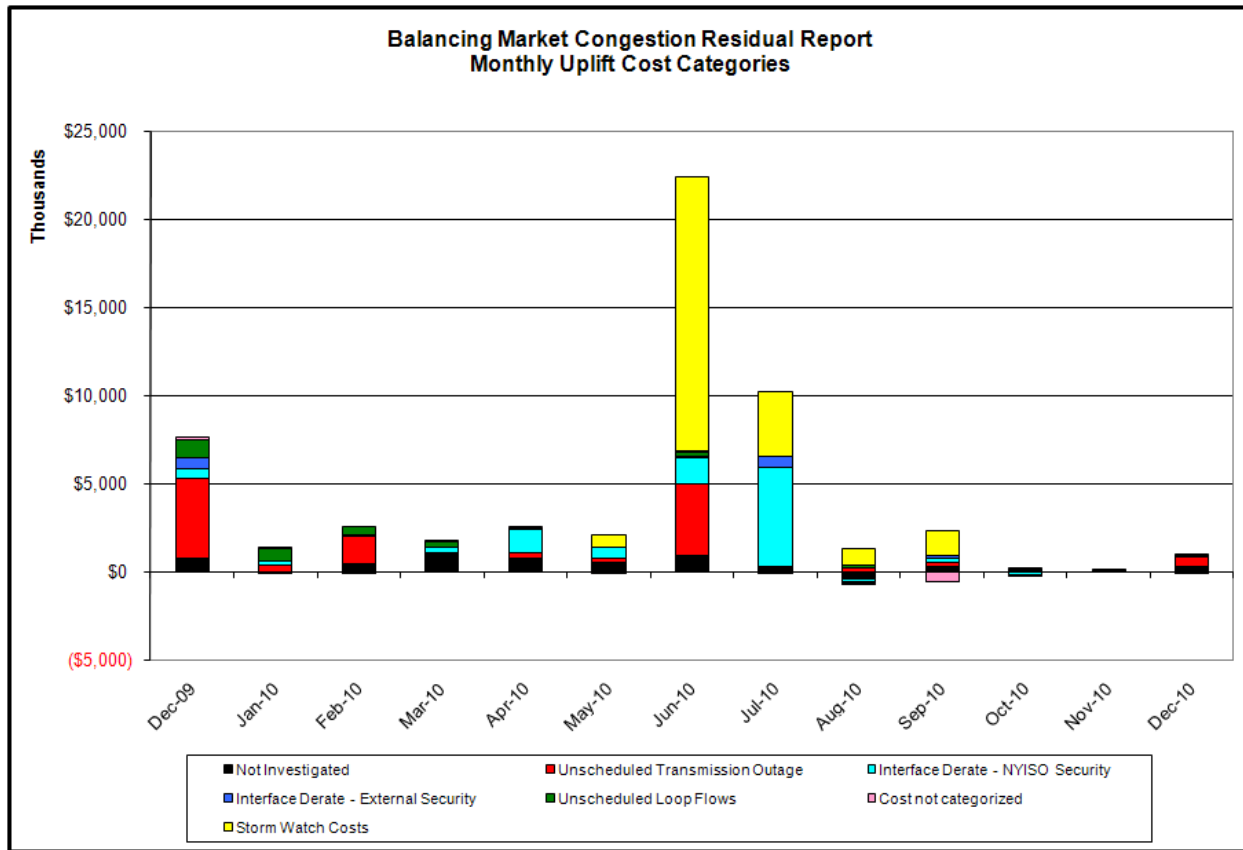
Hourly Error MW - Absolute value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.







Market Performance Metrics



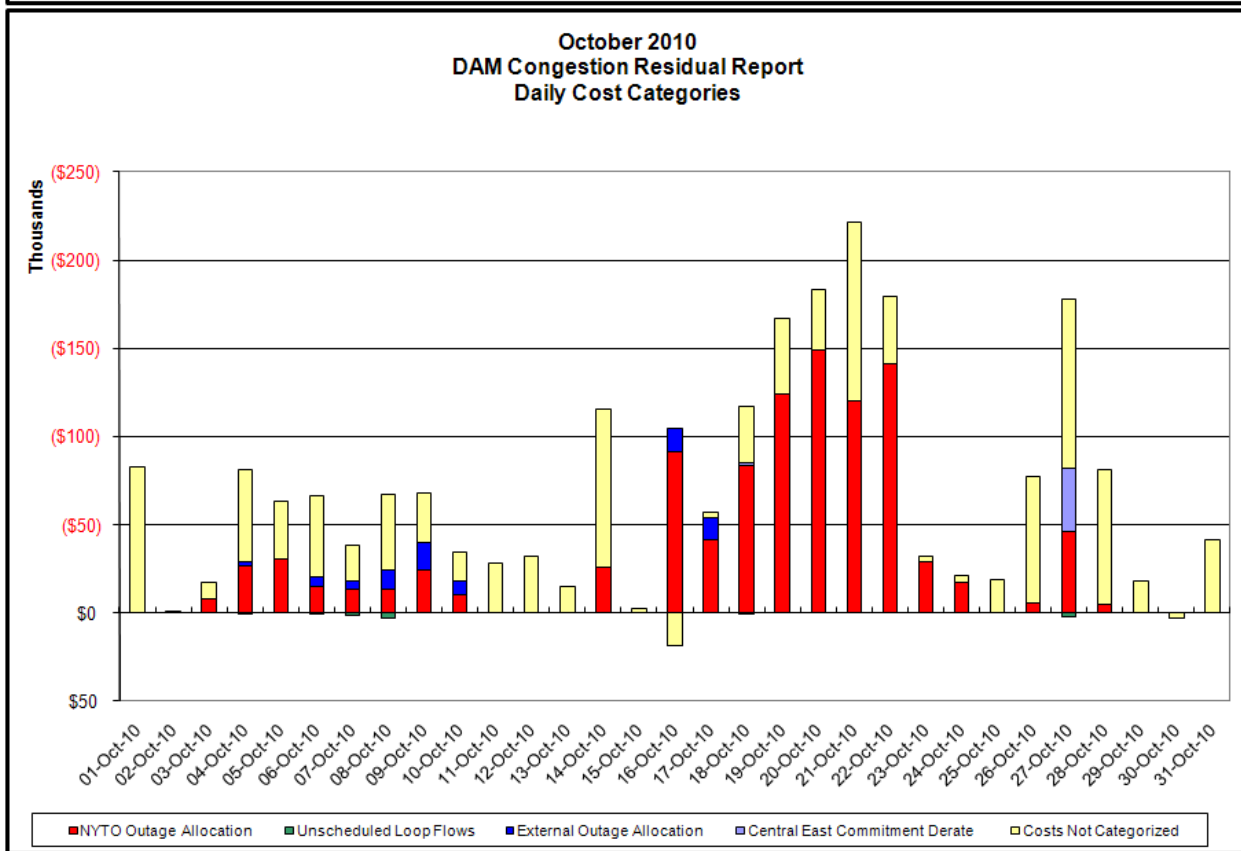
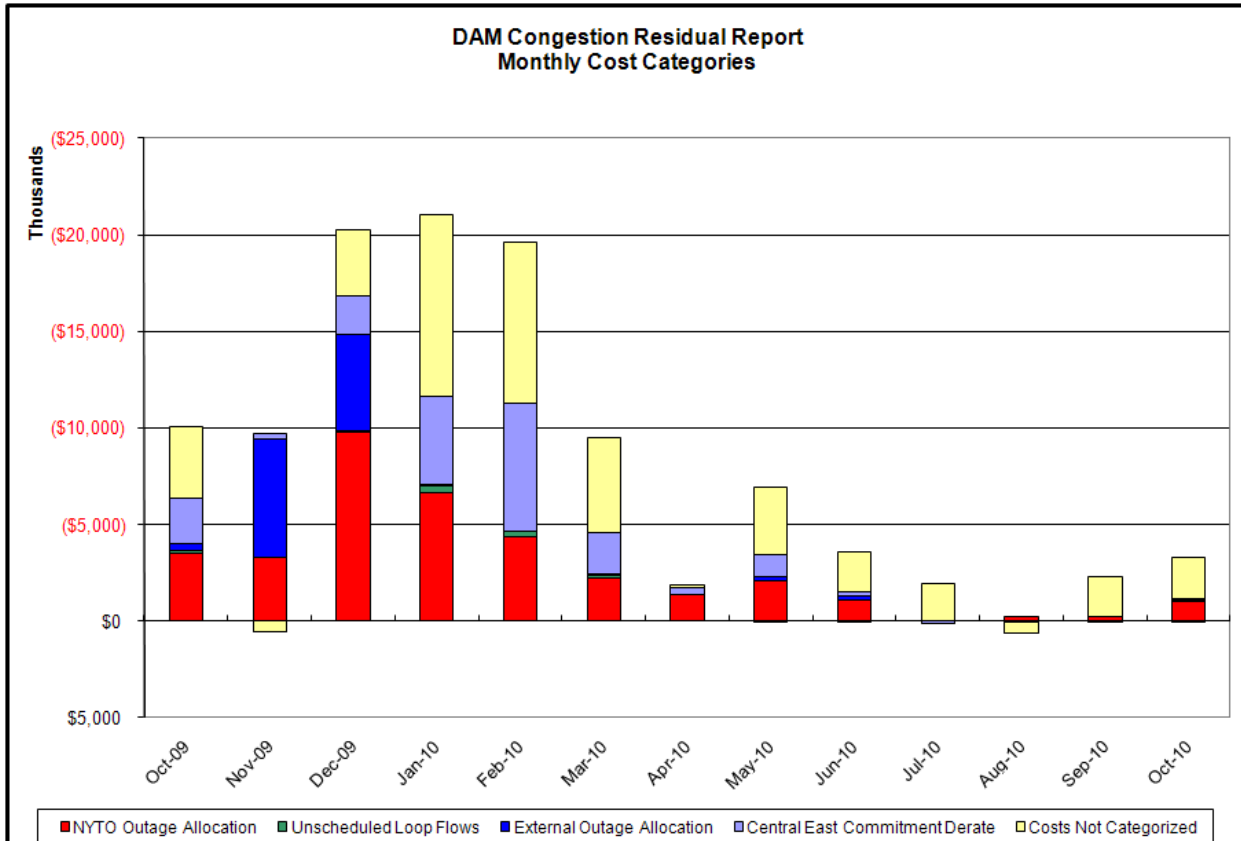
| Day's investigated in December: 14, 15, 16, 18, 20, 21, 22 | | | |
|--|-------------|---------------------|---|
| Event | Date (yyyy) | Hours | Description |
| | 12/14/2010 | 0,6-11 | Forced Outage Massena-Marcy 765kV (#MSU1) Direct Transfer Trip |
| | 12/14/2010 | 20-21 | Derate Leeds-New Scotland 345kV (#94-LN) for I/o New Scotland-Leeds 345kV (#93-LN) |
| | 12/14/2010 | 23 | NYCA DNI Ramp Limit |
| | 12/14/2010 | 20-21 | Derate FreshKills-Willowbrook 138kV (#29211-2) |
| | 12/14/2010 | 23 | Derate FoxHills-Willowbrook 138kV (#29211-1) |
| | 12/14/2010 | 22-23 | PJM DNI Ramp Limit |
| | 12/15/2010 | 18-19 | Forced outage Greenwood-GowanusS 138kV (#42232) |
| | 12/15/2010 | 12-13,15,17 | Derate Astoria West/QueensBridge/Vernon, Freshkills 138kV (#TB1) locked tap |
| | 12/15/2010 | 4,15 | NYCA DNI Ramp Limit |
| | 12/15/2010 | 4 | Derate Central East |
| | 12/15/2010 | 22-23 | Uprate Central East |
| | 12/15/2010 | 12-13,15 | Derate FoxHills-Willowbrook 138kV (#29211-1) |
| | 12/15/2010 | 18 | Derate FreshKills-Willowbrook 138kV (#29211-2) |
| | 12/15/2010 | 12-13,18 | Derate GowanusN-Greenwood 138kV (#42231) |
| | 12/15/2010 | 12-13,15 | Derate Rainey-Vernon 138kV (#36312) |
| | 12/15/2010 | 0 | PJM DNI Ramp Limit |
| | 12/15/2010 | 4 | OH DNI Ramp Limit |
| | 12/15/2010 | 4 | HQ DNI Ramp Limit |
| | 12/16/2010 | 0,2 | Uprate Central East |
| | 12/16/2010 | 7-9 | NYCA DNI Ramp Limit |
| | 12/16/2010 | 12-13,15-16 | Derate FoxHills-Willowbrook 138kV (#29211-1) |
| | 12/16/2010 | 12-13,15-16 | Derate GowanusN-Greenwood 138kV (#42231) |
| | 12/16/2010 | 7 | NE DNI Ramp Limit |
| | 12/18/2010 | 3-4,9-11,18-20,22 | Uprate Central East |
| | 12/20/2010 | 7 | Forced outage GowanusS-Greenwood 138kV (#42232) |
| | 12/20/2010 | 19-20 | Derate Astoria West/QueensBridge/Vernon |
| | 12/20/2010 | 9-10,13-14,17,21-23 | Uprate Central East |
| | 12/20/2010 | 2 | Derate Central East |
| | 12/20/2010 | 19-20 | Derate FoxHills-Willowbrook 138kV (#29211-1) |
| | 12/20/2010 | 19-20 | Derate GowanusN-Greenwood 138kV (#42231) |
| | 12/20/2010 | 13 | Uprate Mott Haven-Dunwoodie 345kV (#71) for I/o Dunwoodie-Mott Haven 345kV (#72) |
| | 12/20/2010 | 17 | HQ-NY Scheduling Limit |
| | 12/21/2010 | 0-6, 8-9 | Extended outage Freshkills-Willowbrook 138kV (#29211-2) |
| | 12/21/2010 | 0-6 | Forced outage East Garden City 345/138kV (#BK 1) and East Garden City 345kV (#PAR1) |
| | 12/21/2010 | 0-6,8-10,13,17-18 | Derate Astoria West/QueensBridge/Vernon, Freshkills 138kV (#TB1) locked tap |
| | 12/21/2010 | 0 | NYCA DNI Ramp Limit |
| | 12/21/2010 | 7,12,14-16 | Uprate Central East |
| | 12/21/2010 | 8-10,13,17-19 | Derate Sprainbrook-East Garden City 345kV (#Y49) for I/o Dunwoodie-Shore Road 345kV (#Y50) |
| | 12/21/2010 | 0 | PJM DNI Ramp Limit |
| | 12/21/2010 | 4-6 | Lake Erie Clockwise Circulation, DAM-RTM exceeds 300MW: Central East |
| | 12/22/2010 | 23 | NYCA DNI Ramp Limit |
| | 12/22/2010 | 8-9,11-15,18-22 | Derate Astoria West/QueensBridge/Vernon, Rainey-Vernon 138kV (#36312), Vernon-Greenwood 138kV (#31231), Freshkills-Willowbrook 138kV (#29211-2) , FoxHills-Willowbrook 138kV (#29211-1) |
| | 12/22/2010 | 16,23 | Uprate Central East |
| | 12/22/2010 | 18,22 | Derate FoxHills-Willowbrook 138kV (#29211-1), Freshkills-Willowbrook 138kV (#29211-2) |
| | 12/22/2010 | 18-22 | Derate GowanusN-Greenwood 138kV (#42231) |
| | 12/22/2010 | 19-20 | Derate Leeds-New Scotland 345kV (#93-LN) for I/o New Scotland-Leeds 345kV (#94-LN) |
| | 12/22/2010 | 6,8,14-15,19,20,22 | Lake Erie Clockwise Circulation, DAM-RTM exceeds 300MW: Central East |
| | 12/22/2010 | 19-20 | Lake Erie Clockwise Circulation, DAM-RTM exceeds 300MW: Leeds-New Scotland 345kV (#93) for I/o Leeds-New Scotland 345kV (#94) |

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 300MW |

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. | |

