New York ISO
Independent System Operator

Storm Watch Redispatch (TSA) Settlements

NYISO

ICAP/MIWG

December 16, 2025
NYISO

Agenda

- **Background**
  - Additional Day-Ahead flow detail
- **Observations**
- **Process Improvements: Short and Long-Term**
- **Next Steps**

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Background

Background: TSA Settlement

- **Thunderstorm Alert/ Storm Watch (TSA): imposed during actual or anticipated severe weather conditions under which region-specific portions of the NYS Transmission System are operated in a more conservative manner thus reducing transmission transfer limits**
  - New York State Reliability Council Rule G.1 R4
    - "Con Edison shall operate its system as if the first contingency has already occurred on its northern transmission system when thunderstorms are within one hour of the system or are actually being experienced."
  - TSA is real-time only event recommended by Con Edison and implemented by the NYISO. NYISO will apply transmission constraint sets to operate as if the first contingency has already occurred and redispatches the grid to reliably support Zone J by increasing local generation and adjusting reserve requirements.
- **The TSA settlements process was developed in collaboration with stakeholders in 2002/2003 to calculate and allocate the real-time redispatch costs associated with TSA to Zone J loads:**
  - Agenda #14 - TSA_Draft Motion for info purposes.PDF
  - Microsoft PowerPoint - TSA_draft_V 2 proposal
- **The TSA settlements process is used to determine a reasonable representation of the costs to be borne by Zone J loads by determining to what extent the reduction in transfer capability into Zone J impacts net congestion payments**
  - See MST Section 4.1.8 and Billing & Accounting Manual Section M.7

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Background: Tariff

- MST 4.1.8… Re-dispatching costs incurred as a result of reductions in Transfer Capability caused by Storm Watch ("Storm Watch Costs") shall be aggregated and recovered on a monthly basis by the ISO exclusively from Transmission Customers in Load Zone J. The ISO shall calculate Storm Watch Costs by multiplying the real-time Shadow Price of any binding constraint associated with a Storm Watch, by the higher of (a) zero; or (b) the scheduled Day-Ahead flow across the constraint minus the actual real-time flow across the constraint.

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Background: Manual

- Accounting & Billing Manual
  - Section M.7.1 Calculation of Storm Watch Redispatch Cost
- Calculate the difference between the Day-Ahead flows and the real-time flows (adjusted as necessary for any constraint limit changes) for all constraints, i, impacted by the TSA, and then calculate the TSA related cost by multiplying the difference in flows by the real time shadow price (SP) of the constraint affected by the TSA and then further multiplying by the fraction of the hour covered by security constrained dispatch (SCD) dispatch period t.
- This calculation will be performed for each SCD dispatch period, t, within the TSA. This is then summed for every SCD interval spanned by a TSA over the month.

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Background: Methodology

- **The methodology for identifying TSA costs has the following components:**
  1. Determine the binding constraints in real-time that are related to the TSA call and record the shadow price and real-time flows for those binding constraints;
  2. Determine what the Day-Ahead flows would have been for the TSA contingencies using Day-Ahead scheduled injections and withdrawals and the Day-Ahead transmission representation;
  3. Calculate the difference between the Day-Ahead flows and the real-time flows and then calculate the TSA related cost by multiplying the difference in flows by the real time shadow price of the binding constraint;
  4. Allocate the TSA costs to NYC loads and rebate these collections to NYISO wide withdrawals

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Additional detail for:

Step 2
Determine Day-Ahead flows across TSA constraints

Step 2

Determine Day-Ahead Flow across TSA constraints

- TSA constraints are not secured in the Day-Ahead Market and thus Step 2 requires after-the-fact analysis to determine flows
- In 2003, the NYISO implemented a process to determine Day-Ahead flows on TSA constraints using the last available solved generator dispatch and forecast load to determine post-contingency flows on TSA constraints with any power imbalance being made up by the slack bus
- In the context of current market processes:
  - STEP 2.1: The process starts with the solved bid redispatch pass from SCUC for a market day that the TSA constraints were active in real time.
  - STEP 2.2: The forecast load is incorporated into the power flow and any difference as a result of the load change is made up from the slack bus resulting in some changes in flows on the transmission system.
  - STEP 2.3: The TSA contingency cases are then run on the SCUC Security Analysis from bid redispatch pass to determine post contingency flows

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July 2025 Observations

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Observations: TSA July 2025

- **During certain outage conditions in 2025 (see Appendix), the magnitude of the TSA settlements triggered additional review after the initial invoice and before the four-month adjustment.**
  - Settlements for the July 1st, 25th and 30th, 2025 TSA events totaled over $53 million. This exceeds the MMU's estimate of total Q3 balancing congestion shortfalls (~$16 million) and TSA costs (~$22 million).
  - The combination of forced outages (see Appendix), the specific binding TSA contingencies during the Storm Watch events, and the larger than usual DAM forecast loads resulted in large power balance mismatches
- **This review identified a process improvement to determine Day-Ahead flows across TSA constraints (Step 2 in the process described on the previous slides)**
  - The NYISO intends to implement short-term and long-term improvements based on this recent review

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Process Improvements

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Process Improvement: Short-Term

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Process Improvement: Short-Term

- **Enhance the process to determine Day-Ahead Flow across TSA constraints (Step 2 of the TSA cost calculation process) for limiting system topologies**
  - Use currently available Day-Ahead Market data, including the forecast redispatch pass from SCUC, instead of the bid redispatch pass from SCUC to better align the power balance and produce more representative Day-Ahead flows
- **The overall methodology as prescribed in the Tariff and originally discussed with stakeholders to determine TSA settlements remains the same.**

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Comparison

Process to determine Day-Ahead Flow across TSA constraints (Step 2 of the TSA cost calculation process) for limiting system topologies

- **Process (pre-July 2025)**
  - **STEP 2.1:** The process starts with the solved bid redispatch pass from SCUC for a market day that the TSA constraints were active in real time.
  - **STEP 2.2:** The forecast load is incorporated into the power flow and any difference as a result of the load change is made up from the slack bus resulting in some changes in flows on the transmission system.
  - **STEP 2.3:** The TSA contingency cases are then run on the SCUC Security Analysis from bid redispatch pass to determine post contingency flows

- **Current process.**
  - **STEP 2.1 UPDATE:** The process starts with the solved forecast redispatch pass from SCUC for a market day that the TSA constraints were active in real time.
  - **STEP 2.2 UPDATE:** No load adjustment. As the forecasted loads are already in the forecast redispatch pass this appropriately eliminates extra flows into the constrained area.
  - **STEP 2.3 UPDATE:** The TSA contingency cases are then run on the SCUC Security Analysis from forecast redispatch pass to determine post contingency flows

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Process Improvement: Short-Term

- **Due to the manual, time intensive nature of the alternate flow calculation process, the NYISO will invoke this process when there are limiting system topologies as determined by the following:**
  - Significant power system events such as transmission outages, generation outages, scarcity, and/or shortage pricing that occur simultaneously with Thunderstorm Alerts and the daily TSA settlement exceeds one million dollars.
- **This new methodology was applied to TSA settlements effective July 1st and is reflected in the four-month invoices.**

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Process Improvement: Long-Term

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Process Improvement: Long-Term

- NYISO is pursuing a process enhancement to eliminate the manual review process, however, this requires more time to develop.
- Approach: Develop new TSA functionality based on the Bid Redispatch Pass using direct power flow calculations rather than legacy approximations.
  - This would be applied to topology conditions for Storm Watch Redispatch cost calculations
- Effort underway in parallel with the Thunderstorm Alert Automation project. Working with the vendor to sequence effort along with the approved projects for 2026.

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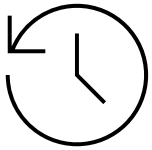
Summary of Process Improvements

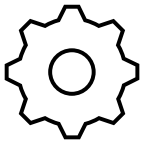


Pre-July 2025 Process

- Day-Ahead generator schedules from the bid redispatch pass
- Forecast load values
- This approach can lead to inaccuracies during unusual system conditions

Current Process / Short-term Improvement

- Forecast pass generator schedules
- Forecast load values
- This approach can reduce the inaccuracies during unusual system conditions but is manual and time intensive



Long-term Plan

- Day-Ahead generator schedules from bid redispatch pass
- Bid redispatch pass data
- This will provide a more precise and automated process

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Next Steps

- Continue to manually review TSA settlements as prescribed in the short-term process improvement
- Pursue process improvements as part of the 2026 Thunderstorm Alert Automation project
- Provide updates to stakeholders confirming process improvements over the longer term

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Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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Appendix

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July 2025 outages

- July 1 – Y87 Wood Street – Pleasantville 345kV Real-Time outage reduced transfer capability on the most limiting non-typical constraint, Y88 Buchannan-Lovett for loss of TSA:CE40 F30/31&F38&W80/81&Y86
- July 25 & July 30 – W90 Pleasantville – Dunwoodie 345kV outage (both DA and RT) reduced transfer capability on the most limiting non-typical constraint, Y88 Buchannan-Lovett for loss of TSA:CE40 F30/31&F38&W80/81&Y86. Scarcity Pricing impacting congestion costs.

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