

# 2014 Reliability Needs Assessment

**Henry Chao**

**Vice President, System Resources & Planning  
New York Independent System Operator**

*Public Information Session  
September 29, 2014  
Rensselaer, New York*

# Topics for Today

- ◆ **Overview**
- ◆ **Definitions of key terms**
- ◆ **Major RNA findings**
- ◆ **Reliability criteria violations**
- ◆ **Scenarios**
- ◆ **Next Steps of the Reliability Planning Process**
- ◆ **Additional information**
- ◆ **Key dates**

## Overview of 2014 Reliability Needs Assessment

- **Process:**
  - *First step of the NYISO's Reliability Planning Process (RPP)*
- **Objective:**
  - *Identify reliability needs of the New York Bulk Power Transmission System*
- **Method:**
  - *Assess both transmission security and adequacy*
  - *Assess resource adequacy*
- **Study period:**
  - *From year 2015 through 2024*

# Definitions of Key Terms

- ◆ **Transmission security — the ability of the bulk power system to withstand disturbances such as electric short circuits or the unanticipated loss of power system components without interruption of power delivery to utility service areas.**
- ◆ **Resource adequacy — the ability of the bulk power system to reliably meet electrical demand based on the expected availability of sufficient resources during periods of peak power use.**

# Major RNA Findings

- ◆ **Transmission security needs in portions of the bulk power transmission system begin in 2015**
- ◆ **NYCA Loss of Load Expectation (LOLE) violation due to inadequate resource capacity located in Southeast New York (SENY) begins in 2019**
  - *LOLE criteria: Probability of unplanned disconnection of any firm load due to resource deficiencies not more than once in ten years (0.1 days per year)*
- ◆ **Major drivers:**
  - *Recent and proposed generator retirements and mothballing, combined with load growth*
  - *Capacity margin (capacity less the load forecast) decreases throughout the study period*

# Summary of Reliability Criteria Violations

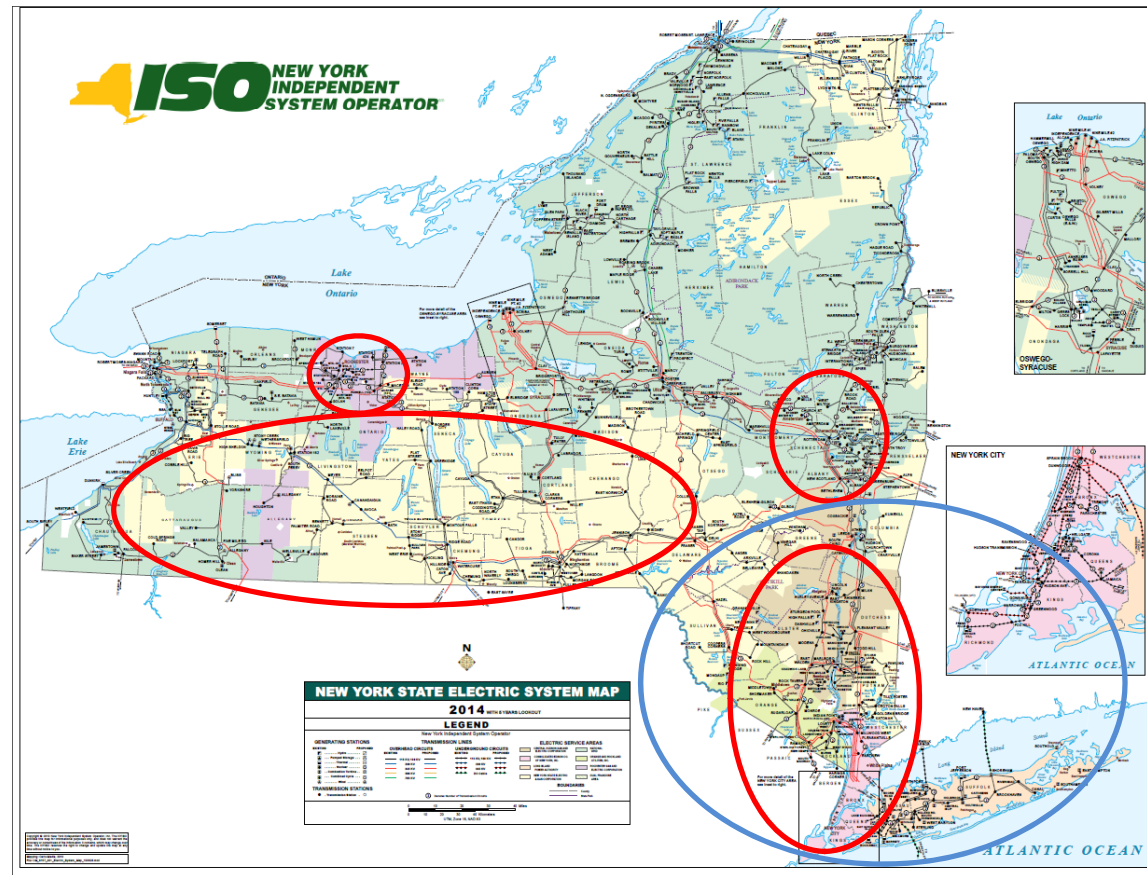
Year of Need	Transmission Security Violations (Area/Load Zone/Transmission Owner)	Resource Adequacy (LOLE)
2015	Rochester Area in Genesee (Zone B), owned by RG&E	No violation
	Binghamton Area in Central (Zone C), owned by NYSEG*	
	Syracuse Area in Central (Zone C), owned by N. Grid	
	Utica Area in Mohawk Valley (Zone E), owned by N. Grid	
	Albany Area in Capital (Zone F), owned by N. Grid	
2016	No additional violations	
2017	Rochester Area issues mitigated	
	Additional Syracuse Area in Central (Zone C), owned by N. Grid	
	Additional Utica Area in Mohawk Valley (Zone E), owned by N. Grid*	
	Binghamton Area voltage in Central (Zone C), owned by NYSEG	
2018	Buffalo Area in Dysinger (Zone A), owned by N. Grid*	
2019	No additional violations	Violation (LOLE = 0.11)
2020	Additional Binghamton Area in Central (Zone C), owned by NYSEG*	Violation (LOLE = 0.13)
2021	Additional Buffalo Area in West (Zone A), owned by N. Grid*	Violation (LOLE = 0.15)
2022	Additional Buffalo Area in West (Zone A), owned by N. Grid*	Violation (LOLE = 0.18)
	Transmission between Capital (Zone F) and Hudson Valley (Zone G), owned by N. Grid	
2023	No additional violations	Violation (LOLE = 0.22)
2024	No additional violations	Violation (LOLE = 0.26)

**\* Some violations would be resolved upon the return of the Dunkirk plant to service.**

# Approximate Location of Violations

Resources needed downstream of the upstate New York to SENY interface are approximately 100 MW in 2019, and 1,200 MW in 2024.

Four primary regions have transmission security needs: Rochester, Western & Central New York, Capital Region, and Lower Hudson Valley & New York City.



Note: The red circles indicate the areas where the load may be impacted by transmission security constraints, and the blue circle indicates the region with resource adequacy violations.

# Summary of Scenarios

- ◆ ***Transmission Security with 90/10 forecast***
  - ***Approximately 2,400 MW higher forecast would result in the earlier occurrence of the reliability needs identified in the base case***
  - ***Under this scenario, beginning in 2017 there would be insufficient resources to meet the minimum 10-minute operating reserve requirement of 1,310 MW. Starting in 2020, there would be insufficient resources to meet the projected 90/10 peak load.***
  
- ◆ ***Stressed Winter Scenario***
  - ***Winter of 2013-2014 experienced five major cold snaps***
  - ***Resources may become energy limited due to fuel constraints***
  - ***Assuming no assistance from neighboring areas, a capacity loss of 7,250 MW would result in insufficient resources in 2015***



## Summary of Scenarios (cont.)

- ◆ **If the Indian Point Plant were retired by the end of 2015, significant violations of transmission security and resource adequacy criteria would occur in 2016**
- ◆ **Zones at Risk shows the level of capacity removal at which a NYCA LOLE violation would occur for the year 2015**
  - *A-F at 2,500 MW*
  - *G-I at 650 MW*
  - *J at 650 MW*
  - *K at 550 MW*
- ◆ **High load forecast, e.g., 6% or 2000 MW higher than the base load forecast in 2024, would advance year of need to 2017**
- ◆ **2014 RNA also considered impacts of environmental regulations on energy production, e.g., EPA's MATS and Carbon Rules**

# Next Steps

- ◆ **Board approved the 2014 RNA on Sep. 16**
- ◆ **NYISO initiates second step of the Reliability Planning Process**
- ◆ **NYISO issues requests for solutions to the identified Reliability Needs:**
  - *NYISO solicits market-based projects from Developers*
  - *NYISO requests regulated backstop solutions from Responsible TOs and alternative regulated projects from Developers*
- ◆ **NYISO will consider major system changes that have occurred since the start of the 2014 RNA for inclusion in the CRP base case.**

# Additional Information Affecting CRP Solutions

- ◆ **Resource Adequacy:**

- *Generation additions/exits (e.g. Selkirk, Dunkirk, Danskammer, Astoria 20, etc.)*
- *ConEd's DR/EE/CHP program*
- *The amount of need may change significantly and the year of need may be delayed by around 4 years; further study is required to determine full impact*

- ◆ **Transmission Security:**

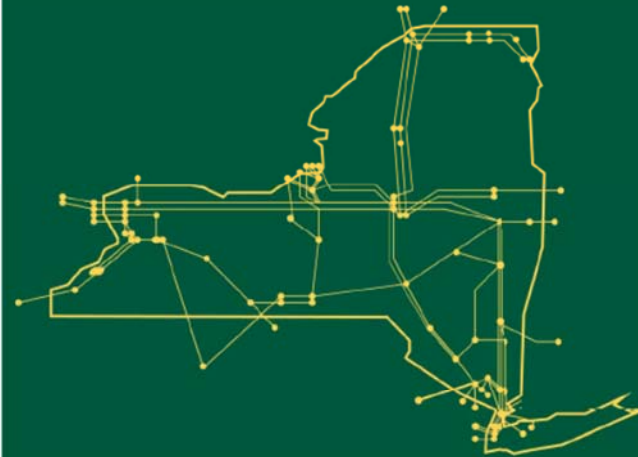
- *Resource returns and additions may affect needs*
- *Updated Local Transmission Plans by TOs*
- *Needs continue for Rochester, Western and Central NY*

- ◆ **Further events, not identified above, but that occur before Oct. 1, should be taken into consideration**

# Preliminary CRP Key Dates

- ◆ **Oct. 1: NYISO issues the letter soliciting solutions to the Reliability Needs, with description of the anticipated changes to the CRP base case and how they may impact the needs**
- ◆ **Oct. 30: Transmission Developers should submit Developer Qualification packages to [DeveloperQual@nyiso.com](mailto:DeveloperQual@nyiso.com)**
- ◆ **Dec. 1: Last day for Developers to submit proposed solutions to [DeveloperSolution@nyiso.com](mailto:DeveloperSolution@nyiso.com)**
- ◆ **Q1 2015, ESPWG/TPAS: NYISO reports the determination of the viability and sufficiency assessment of the proposed solutions**
- ◆ **Q4 2015: Completion of 2014 CRP**

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



[www.nyiso.com](http://www.nyiso.com)