

2014 Comprehensive Reliability Plan

Yachi Lin

*Manager, Reliability Planning
New York Independent System Operator*

Management Committee

May 27, 2015

KCC



2014 Comprehensive Reliability Plan

- ◆ **Scope:**

- *Develop a long-term plan such that the New York Bulk Power Transmission System will meet applicable reliability criteria*
- *Satisfy reliability needs identified in the Reliability Needs Assessment (RNA)*

- ◆ **Study period:**

- *From year 2015 through 2024*

- ◆ **Background:**

- *Reliability Needs first identified in the 2014 RNA*

CRP Base Case Development

- ◆ **Based on 2014 RNA model, updated based on inclusion rules described in Reliability Planning Process manual**
- ◆ **Updates include:**
 - *Transmission Owners' local transmission owner plans (LTPs)*
 - *Generator status changes, including generators returning to service, withdrawal of a notice of intent to mothball, and a restoration to full capacity operation.*
- ◆ **These updates resulted in approximately 2,000 MW of additional resources being included in the CRP**

Finding 1: Resource Adequacy

- ◆ **There are sufficient resources in the CRP base case to meet the resource adequacy criterion for the entire ten year study period.**
- ◆ **The margin to maintain reliability narrows over the ten-year study period based upon projected load growth and the assumption that there are no additional resources added after 2017**
- ◆ **The needs will be revisited in subsequent Reliability Planning Process cycles.**

Finding 2: Transmission Security

- ◆ **When the LTP and generation updates are considered, the New York bulk power system meets applicable reliability criteria throughout the study period, but operating procedures will be necessary to resolve potential overloads for years 2015 through 2017.**

Finding 3: Risk Factors

- ◆ **Some risk factors could adversely affect the effectiveness of the plan and hence system reliability over the ten-year planning horizon, including:**
 - *Timely completion of Transmission Owner Local Transmission Plans*
 - *Higher than forecasted system load levels*
 - *Increased natural gas dependency*
 - *Reduced system resources*
 - *Aging infrastructure*
 - *Operating constraints due to Federal and State environmental regulations*

Sensitivity and Scenario Analysis

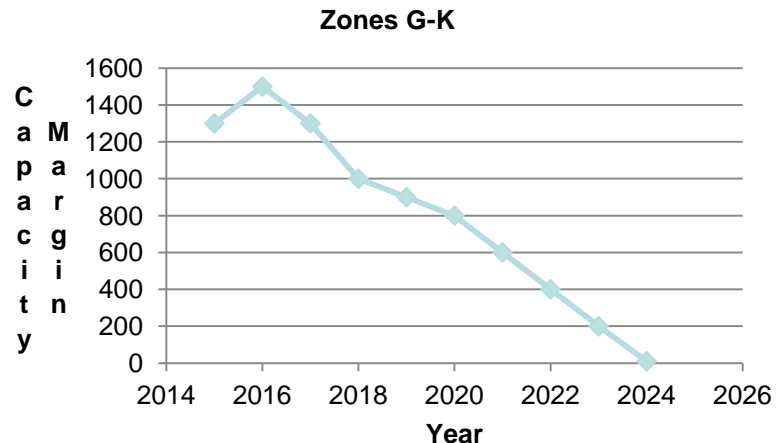
- ◆ **With the substantial amount of additional resources included in the 2014 CRP, the sensitivity and scenario analysis from the RNA were reviewed.**
- ◆ **Sensitivity Analysis:**
 - **Dunkirk fuel conversion: *With the inclusion of Dunkirk Plant fuel conversion project and updated LTP in the 2014 CRP, the previously identified transmission security violations in the Binghamton and Buffalo areas are fully resolved under assumed load and system conditions.***

Scenario Analysis

- ◆ **Transmission Security under 90/10 Forecasted Load:** The year in which the system would have insufficient resources to meet the minimum operating requirement of 1,310 MW is now postponed from 2017 in the RNA to 2023. However, at 90/10 load conditions, transmission security issues could be experienced prior to 2024.

- ◆ **Zonal Capacity at Risk:**

Capacity margins increased from RNA due to the additional resources included in the CRP



Scenario Analysis (cont.)

- ◆ **Indian Point Energy Center Plant Retirement:** If the Indian Point Plant becomes unavailable in 2016, there would be an immediate need for approximately 500 MW in compensatory MW in SENY to satisfy resource adequacy criteria, under assumed load and system conditions.
- ◆ **High (econometric) Load Forecast:** At this load level, the 2014 RNA concluded that resource adequacy violations could have occurred as soon as 2017. With the additional resources modeled in the 2014 CRP, the year of potential violation would be postponed to 2020.

Recommended Actions

- ◆ **Monitor and Track Potential New Developments**
 - *Economic conditions, governmental programs and environmental regulations can change and result in financial stresses that may lead to the loss of resources or, alternatively, could result in economic opportunities for resource additions that could positively affect system conditions.*
 - *New market-based generation projects under study in the NYISO's interconnection process could increase the reliability margin in the long term, if such capacity comes into service during the study period.*

- ◆ **Monitor and Track Transmission Owner Plans**
 - *Local transmission projects that are identified to maintain reliability should be sited and constructed without further delay to minimize reliance on the interim operating procedures, which include possible load shedding.*

Recommended Actions (cont.)

- ◆ **Continue Coordination with the New York State Public Service Commission (PSC)**
 - *The State of New York is presently considering expanding and extending a variety of clean energy programs that could positively affect reliability.*
 - *The NYISO will continue to monitor and participate in other planning activities including, but not limited to, NYPSC proceedings on the New York Energy Highway Blueprint, Reforming the Energy Vision (REV), Alternating Current Transmission Upgrades, Clean Energy Fund, Indian Point Reliability Contingency Plan, and individual proceedings on generation retirement and repowering.*
- ◆ **Monitor Changes that could Impact Risk Factors**
 - *The NYISO planning processes include steps that actively monitor and address the potential impacts of additional system changes and known risk factors.*

Conclusions

- ◆ **With these additional capacities and updated LTPs:**
 - *This 2014 CRP determines that the New York bulk power system will meet all applicable reliability criteria over the 2015 through 2024 study period under assumed load and system conditions.*
 - *The Reliability Needs initially identified in the 2014 RNA are satisfied and no solutions are required at this time*

2014 Comprehensive Reliability Plan



	Reliability Needs	Comprehensive Reliability Plan
2014		Zone G, Danskammer (493 MW), 12/2014 Zone C, Binghamton CoGen (41 MW), 12/2014
2015	Transmission security violations (Zones B, C, E, F) No resource adequacy violations	Zone J, USPG Astoria 20 (177 MW), spring 2015 Zone G, Bowline #2 Repair (377 MW), summer 2015 Zone A, National Grid Five Mile Rd LTP, 12/2015
2016	No additional transmission security violations No resource adequacy violations	Zone A, Dunkirk Refueling (435 MW), summer 2016 Zone J, ConEd DR/EE/CHP (125 MW), 6/2016 Zones E,G,J, Transco TOTS, 6/2016
2017	Additional transmission security violations (Zones C, E) No resource adequacy violations	Zone B, RG&E Station 255 (RARP) LTP, 5/2017 Zone C, National Grid LTP, 12/2017 Zone C, NYSEG LTP, 12/2017 Zone G, Taylor Biomass (19 MW), 2/2017
2018	Additional transmission security violations (Zone A) No resource adequacy violations	No additional solution is needed
2019	No transmission additional security violations Resource adequacy violation (100 MW, Zones G-K)	No additional solution is needed
2020	Additional transmission security violations (Zone C) Resource adequacy violation (300 MW, Zones G-K)	No additional solution is needed
2021	Additional transmission security violations (Zone A) Resource adequacy violation (500 MW, Zones G-K)	No additional solution is needed
2022	Additional transmission security violations (Zones A, F, G) Resource adequacy violation (700 MW, Zones G-K)	No additional solution is needed
2023	No additional transmission security violations Resource adequacy violation (950 MW, Zones G-K)	No additional solution is needed
2024	No additional transmission security violations Resource adequacy violation (1150 MW, Zones G-K)	No additional solution is needed

Next Steps

- ◆ **Market Monitoring Unit review posted with MC meeting materials**
- ◆ **Board review and approval**

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