

MEMORANDUM

TO: Steve Whitley

FROM: David Patton
Pallas LeeVanSchaick

DATE: March 7, 2013

RE: Market Monitoring Unit Review of the NYISO's 2012 Comprehensive Reliability Plan ("CRP")

A. Introduction and Summary

The CRP is the second step in the NYISO's Comprehensive System Planning Process ("CSPP"). In the first step, the Reliability Needs Assessment ("RNA") identifies the Reliability Needs of the system over a 10-year study period based on a set of assumed (i.e., Base Case) conditions and solicits proposals for market-based and regulated solutions. Then, the CRP identifies the solutions that could be used to satisfy the Reliability Needs of the system over the study period. Furthermore, the CRP indicates whether any regulated solution(s) must begin to move forward in order to satisfy the Reliability Needs of the system in any year of the study period.

As the Market Monitoring Unit for the NYISO, we are required to provide comments on the CRP regarding the results of the analysis and the extent to which the current market design provides incentives for the markets to satisfy the identified Reliability Needs.¹

The findings of the CRP highlight the importance of moving forward with two significant market design enhancements. First, assuming it is implemented in May 2014 as expected, the Southeast New York ("SENY") capacity zone will enable the NYISO to satisfy its resource adequacy criteria more efficiently over the next decade, particularly if existing generators such as the Indian Point units retire unexpectedly. Second, adopting a competitive entry exemption from the buyer-side mitigation measures will ensure that market-based investors are not prevented from making investments that would otherwise help satisfy resource adequacy criteria if units retire unexpectedly. The need for these enhancements is discussed further in this memo.

Although the NYISO markets are generally well-designed and two key market enhancements are underway, we still have concerns regarding the capability of the

¹ See NYISO MST Section 30.4.6.8.3.

current capacity market framework to accurately reflect locational capacity requirements if future reliability needs emerge. Accordingly, this memo recommends one additional market design enhancement to better allow the NYISO markets to facilitate efficient investment and retirement decisions while satisfying the system’s planning requirements.

B. Significant Findings of the 2012 CRP

The 2012 RNA identified resource adequacy violations in SENY beginning in 2021.² The CRP concluded that the resource adequacy violations can be mitigated by the proposed market solutions. The CRP also concluded that it is unnecessary for any regulated solutions to move forward at this time to mitigate the resource adequacy violations, since the necessary lead times for the proposed solutions are exceeded by the time remaining before the violations would occur.

Although the CRP concludes that the proposed market solutions are sufficient to mitigate the Reliability Needs identified in the RNA, it highlights that changes from the assumptions in the RNA Base Case could accelerate the onset of the identified violations or result in additional violations. For instance, the CRP notes that the retirement of four units at the Danskammer plant in Zone G will accelerate the onset of resource adequacy violations associated with the UPNY-SENY interface from 2021 to 2019.³ However, these retirements were not reflected in the Base Case, since the units were retired partly as a result of damage sustained after the 2012 RNA was approved and after the 2012 CRP base case was finalized. Nonetheless, the NYISO market will be well positioned to provide appropriate investment signals in the affected area if the SENY capacity zone is created in 2014.

With regard to potential retirements, the most pressing concern is that the two Indian Point nuclear units in Zone H may not be re-licensed. The RNA found that the Indian Point retirements would lead to substantial transmission security violations on the UPNY-SENY interface unless sufficient resources are added in Zones G to K by 2016.⁴ As in the case of the Danskammer retirement, the creation of the SENY capacity zone will better enable the capacity market to provide appropriate investment signals in the

² The RNA also identified transmission security violations in Zones B, C, and G beginning in 2013. Zones B, C, and G and known as Genesee, Central, and Hudson Valley, respectively. The CRP concluded that the transmission security violations will be mitigated by the Local Transmission Plans (“LTPs”) of responsible transmission owners if the LTPs move forward as planned. Additionally, the announced mothballing of the Dunkirk Plant and of the Cayuga Plant (which are located in Zones A and C, respectively) require National Grid and NYSEG to develop solutions to the associated potential thermal and voltage violations.

³ The UPNY-SENY interface limits flows into SENY, which comprises Zones G to K. Zones G, H, I, J, and K are known as Hudson Valley, Millwood, Dunwoodie, New York City, and Long Island, respectively.

⁴ The Indian Point units’ licenses expire in late 2013 and late 2015. The 2012 RNA did not evaluate whether violations would occur in 2014 and 2015 after the first of the Indian Point units is retired.

areas where additional capacity will be needed to prevent violations on the UPNY-SENY interface. Indeed, the creation of the SENY capacity zone will likely be needed to: (i) motivate some of the proposed market solutions to move forward and (ii) provide incentives for some existing generation to do the maintenance necessary to remain in service over the study period.

C. Benefits of Creating a New SENY Capacity Zone

The creation of a SENY capacity zone will help the NYISO maintain reliability efficiently, and it is overdue. The delay in creating the SENY capacity zone has had several consequences that illustrate the importance of promptly creating a new capacity zone when it is needed.

- The total amount of unforced capacity sold in Zones G, H, and I has fallen by 1 GW (or 21 percent) since the summer of 2006, even as the need for resources to address the UPNY-SENY interface has become more apparent in the NYISO’s CRP Process. Some of this capacity may have been economic to remain in service or been maintained more reliably if the SENY capacity zone had been implemented sooner.
- Because the binding UPNY-SENY interface limits supply resources from reaching Zones G-K, capacity retirement in Zones G and H has resulted in higher Local Capacity Requirements (“LCRs”) for Zones J and K. From the 2010/11 Capability Period to the 2013/14 Capability Period, the LCR for Zone J has risen from 80 percent to 86 percent. A one percent increase in the LCR equates to a \$1.30/kW-month increase in capacity prices given the current level of the capacity demand curve for New York City (assuming no change in the quantity of supply). Consequently, the delay in modeling a SENY capacity zone has led to higher capacity prices in Zone J.
- Although the capacity market will not recognize the higher reliability benefits of capacity in Zones G, H, and I relative to capacity in Zones A to F until 2014, the Highway Deliverability Test has recognized this for several years. Consequently, some capacity suppliers outside SENY have been prevented from selling at the prevailing price levels, which has increased the capacity prices in Zones A to F.
- Waiting until 2014 to model the SENY capacity zone will likely result in a sharp increase in prices for some customers in Zones G, H, I, and K, rather than a gradual increase that could have been ameliorated with modest changes in consumption behavior, demand response, or the retention of the pre-existing capacity.

In summary, the creation of a SENY capacity before 2014 would have facilitated more efficient investment in both new and existing resources where the CRP has identified resources are necessary for resource adequacy over the next ten years. Furthermore, more efficient pricing of capacity in SENY by modeling a SENY capacity zone would

likely have reduced capacity clearing prices in Zones A to F and in Zone J, areas which include 73 percent of the load in New York State.

D. The Competitive Entry Exemption

In addition to the locational issues raised by the potential retirement scenarios in the 2012 CRP, these scenarios also indicate potential concerns regarding the functioning of the Buyer-Side Mitigation (“BSM”) rules. These rules are intended to deter uneconomic investment to depress capacity prices, while allowing for competitive investment. One of the key elements of these rules is a Buyer-Side Mitigation Exemption Test, which is conducted roughly three years in advance of the unit entering the market to determine whether the unit appears uneconomic based on the forecasted conditions at the time of its entry.⁵ It is difficult, however, for these forecasts to account for uncertainty regarding unit retirements. Currently, the forecasted capacity prices only assume that suppliers that have submitted a retirement notice (and not just a mothball notice) to the PSC will retire. To the extent that other significant retirements are likely, the Buyer-Side Mitigation Exemption test will likely understate the forecasted prices and over-mitigate competitive entry.

To address these concerns, we have recommended that the NYISO and its participants amend the BSM rules to grant a BSM exemption to suppliers engaged in purely private investment. This would allow merchant investors to make investment decisions based on their own expectations of increased capacity revenues that would occur if additional retirements occur (beyond those that have been noticed to the PSC).

The NYISO is working with its stakeholders on rules to exempt a developer that can establish that it will not receive public subsidies or revenues either directly (as a regulated entity or public authority) or indirectly through a contract with another party. If such a rule can be effectively administered by the NYISO, it would help ensure that a competitive market-based investment that is economic given uncertain potential retirements would not be precluded by the buyer-side mitigation. In other words, it would allow private investors to incorporate their own expectations regarding the probability and implications of some of the scenarios studied in the CRP into their own investment decisions.

We recommend that the NYISO continue to place a high priority on developing a provision that would achieve this objective, while minimizing the possibility that new resources would be exempted that are receiving some form of direct or indirect public support.

⁵ If the project fails the exemption test, an offer floor is imposed to prevent the unit from selling capacity below a level that is based on the estimated levelized Cost of New Entry. This is done in order to deter a firm from moving forward with an uneconomic investment in order to suppress capacity prices.

E. Capacity Zone Definitions

The uncertainty regarding the future of the Indian Point nuclear plant and the potential for other significant retirements highlights the importance of addressing market design issues that limit the location-specific economic signals provided by the NYISO markets. Currently, the NYISO’s process for creating New Capacity Zones would not address the reliability needs that would result from unexpected retirements in a timeframe that would facilitate efficient market-based investment for two reasons. First, the process to create New Capacity Zones is lengthy and uncertain. Second, the New Capacity Zone study methodology is based on the Highway Deliverability Test criterion and, thus, does not consider whether additional capacity is needed to satisfy resource adequacy requirements in a particular area.⁶

This could be largely addressed by pre-defining a complete set of potential interfaces or zones that would be modeled in the NYISO capacity market as we recommended in the 2011 State of the Market Report:

One means to do this would be to pre-define potential deliverability constraints or zones that would be modeled in the NYISO capacity markets. Once defined, the NYISO would cease allocating transmission upgrade charges to resources that affect these constraints. Instead, the capacity market would efficiently limit sales from these resources by binding in the capacity auction. Upgrade of these deliverability constraints could be governed economically by the resulting locational price differences in the capacity, energy and ancillary services markets. Pre-defining deliverability constraints or capacity zones would also eliminate the cumbersome three year process to implement new individual capacity zones...⁷

Implementing this recommendation would allow the NYISO capacity market to immediately price capacity efficiently at each location as new capacity enters or existing capacity retires, whether expectedly or unexpectedly. These locational capacity prices

⁶ In the New Capacity Zone (“NCZ”) Study methodology, the NYISO determines whether any Highway Interface would be constrained for a given set of supply and demand assumptions. Supply resources are included in the Study to the extent that they have CRIS rights, and are included even after they have retired for as long as they retain CRIS rights for up to three years. The NCZ Study methodology is set forth in MST 5.16.1. For example, if the Indian Point units were to retire at the end of 2015, the first time the units would be excluded from the NCZ Study would be in the Study Period beginning in 2018 and the first time a new zone could be created as a result would be in May 2020—far after the NYISO would have initiated its process for identify a Gap Solution for the imminent reliability need. This would be a best case scenario because if the retiring firm sold its CRIS rights to a firm within the area with the capacity need, the NCZ Study would likely not identify the need for an additional zone.

⁷ See *2011 State of the Market Report for the New York ISO Markets*, page 37-38.

would reflect the marginal value of the resources in these locations for satisfying the NYISO’s resource adequacy needs.

The 2012 RNA listed nine key interfaces that are modeled in the resource adequacy assessment.⁸ Although three of the interfaces will be represented in the capacity market (once the SENY zone is created in 2014), the limited transfer capability of other interfaces (e.g., the UPNY-ConEd interface) could lead to resource adequacy issues in the future.⁹ Since the capacity market is the primary market mechanism for satisfying resource adequacy planning criteria, it would be beneficial to define a full set of capacity zones that are capable of reflecting capacity needs for the interfaces that are studied in the RNA. This would ensure that the unexpected retirement of a key unit in the state’s aging fleet would immediately lead to appropriate capacity market signals, allowing prospective investors to be reasonably confident that the reliability need would be reflected promptly in the capacity market outcomes.¹⁰

F. Conclusion

Overall, we continue to find that the NYISO markets are well-designed and generally provide efficient price signals. However, it is important for the NYISO to move forward with the SENY capacity zone and the competitive entry exemption to facilitate efficient investment to satisfy planning reliability criteria. Lastly, given the risk that additional units in the NYISO’s aging fleet may retire unexpectedly, it is also important for the NYISO to develop rules to ensure that future resource adequacy needs are reflected promptly in the capacity market. Such rules must be transparent and predictable so investors can be confident that the capacity zone will be in place when the investor responds to an imminent resource adequacy need. With these market design enhancements, we are confident that the NYISO markets will continue to efficiently satisfy the region’s resource adequacy needs.

⁸ See Tables 4-3, 4-4, and 4-5. The nine interfaces included in these tables are: Dysinger East, West Central, Central East (less PV-20 plus Fraser-Gilboa), F to G, UPNY-SENY, UPNY-ConEd, I to J, I to K, and I to J & K.

⁹ The 2012 RNA also found that, depending upon where new resources were added to replace the Indian Point units, “...the UPNY-ConEd interface and Zone I to J and K interface may be constrained by voltage or thermal limits.” (See page 43) The UPNY-ConEd interface separates Zone G from Zones H and I, suggesting that there could be a need for some of the new resources or transmission investment to be added in Zones H or I.

¹⁰ Approximately 10 GW of the NYISO’s in-service capacity is more than 40 years old.