POTOMAC ECONOMICS

Memorandum

TO: Rob Fernandez

FROM: David Patton & Pallas LeeVanSchaick

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RE: MMU Comments on the NYISO's 2018 Comprehensive Reliability Plan

As the Market Monitoring Unit ("MMU") for the NYISO, we are required to provide comments on the Comprehensive Reliability Plan ("CRP") regarding the results of the analysis and the extent to which the current market design provides incentives for the markets to satisfy Reliability Needs.[1] This memo discusses the results of the 2018 CRP and the implications for the NYISO's market design.

A. Introduction

The CRP is the second step in the NYISO's Reliability Planning Process ("RPP"). 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.

The final 2018 RNA identified no unmet reliability needs during the study period. In the 2018 CRP, the NYISO performed an analysis of potential risks to reliability if future changes in the bulk power system differ from the CRP base case assumptions. The NYISO focused on potential risks if the DEC's proposed Peaker Rule is adopted and this new regulation leads to the retirement of 3.3 GW of downstate peaking units. Under this scenario, the NYISO, Con Edison, and PSEG Long Island identified numerous violations of resource adequacy, transmission security, transient voltage recovery, loss-of-gas, and other criteria in New York City and Long

[1] See NYISO MST Section 30.4.6.8.3. "Following the Management Committee vote," the MMU evaluates "whether market rules changes are necessary to address an identified failure, if any, in one of the ISO's competitive markets."

Island. The CRP stated that these violations could be avoided through a variety of solutions, including by retaining 1,280 MW of peaking capacity in specific areas.

B. Comments on the 2018 CRP Results

The CRP analyzes the reliability impacts of a New York DEC ("Department of Environmental Conservation") proposal that could lead to the retirement of up to 3.3 GW of older peaking generators. Although most of these generators are not needed to satisfy planning reliability criteria, nearly 1.3 GW may need to be retained (or replaced with alternative resources) across three load pockets in New York City and three load pockets on Long Island. To ensure that these local reliability needs are satisfied through market-based investments rather than out-of-market procurements such as RMR ("Reliability Must Run") contracts, it is critical to set efficient prices for energy and ancillary services markets when peaking units are used to maintain reliability and manage congestion in these load pockets.

If the value of resources in key load pockets is not appropriately reflected in energy and ancillary services prices, investors will not have sufficient incentives to place new resources in these load pockets. Investors may instead place new resources outside of load pockets where investment costs and operating costs are lower but where the new resources would provide less reliability value. Even if much of the new investment is in subsidized resources, efficient energy and ancillary service prices are still important, since subsidized resources generally rely on a mix of contract revenues and wholesale market revenues. Thus, efficient energy and ancillary services prices would help steer subsidies towards projects that are more helpful to system reliability.

Fast-starting peaking units typically provide operating reserves at a lower cost and with less pollution than other fossil-fueled units, since they can provide reserves from an offline state. Such units will become increasingly important as more intermittent generation is interconnected to the power grid and conventional generators are pushed into more of a reserve role. Peaking units are flexible enough to start-up for short periods when intermittent generation falls, while slow-start units have to run continuously in order to provide operating reserves. The CRP highlights several ways in which peaking units bolster reliability while producing less pollution than other conventional resources. For example, the CRP states:

> The current reliability rules allow for the Con Edison underground transmission system circuits to be operated…to their Short Term Emergency (STE) ratings. This capability is dependent on being able to reduce the loading on a circuit to its Long Term Emergency (LTE) rating within 15 minutes through the use of operating reserve and PAR adjustments…If resources that replace the affected units are not capable of providing 10-minute operating reserve, there is an increased likelihood that the underground transmission system circuits would need to be secured pre-contingency to LTE ratings rather than to STE. *A result of*

> *operating to LTE ratings would be a greater level of resource commitment and dispatch within the load pocket.*[2]

Hence, when peaking units are available, Con Edison is able to import more power into the city and in-city load pockets. As the amount of peaking generation in New York City falls, it may require increased electricity production from fossil-fueled generation in the city.

> [The thunderstorm watch procedure] requires that Con Edison 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. *A greater level of commitment may be required to ensure sufficient resources within the Con Edison system can respond in real-time for the duration of the storms.*[3]

This is another example where the reduced availability of peaking generation could have the unintended effect of increasing the need to run fossil-fuel generators in New York City.

Likewise, the discussion of the Long Island system impacts presents detail on several circumstances when the operators would obtain reserves by committing thermal generation rather than relying on offline peaking resources. Ultimately, these potential unintended consequences reinforce the importance of efficient price signals in these areas. Accordingly, we have made several market design recommendations that would enhance price signals.

C. Conclusions and Recommendations

The 2018 CRP evaluates the reliability impacts of the NYDEC proposed Peaker Rule, which could lead to the retirement of up to 3.3 GW of older peaking generators. Although most of these generators are not needed to satisfy planning reliability criteria, nearly 1.3 GW may be needed across three load pockets in New York City and three load pockets on Long Island to satisfy reliability criteria.

To ensure adequate incentives to build and/or maintain resources in import-constrained areas in New York City and Long Island, we have recommended the NYISO adopt three significant market reforms that are discussed below: [4]

2018-1: Model in the day-ahead and real-time markets Long Island transmission constraints that are currently managed by NYISO with OOM actions and develop associated mitigation measures.

Market incentives are inadequate for investment in resources that help secure the 69kV system on Long Island partly because these facilities are not modeled in the NYISO's energy and

[2] See *NYISO 2019-2028 Comprehensive Reliability Plan*, page 18.
[3] See *NYISO 2019-2028 Comprehensive Reliability Plan*, pages 18-19.
[4] See *2018 State of the Market Report for the New York ISO Markets*, Section XI.

ancillary services markets. Currently, these constraints are secured primarily through out-of-market actions, which have raised guarantee payments and are sometimes economically inefficient.

2017-1: Model local reserve requirements in New York City load pockets.

The NYISO is required to maintain sufficient energy and operating reserves to satisfy N-1-1 local reliability criteria in New York City. These local requirements are not satisfied through market-based scheduling and pricing, so it is necessary for the NYISO to satisfy these local requirements with out-of-market commitments in the majority of hours. The costs of out-of-market commitments are recouped through make-whole payments rather than through market clearing prices for energy and operating reserves. The routine use of make-whole payments distorts short-term performance incentives, as well as incentives for new investment that can satisfy the local requirements.

2016-1: Consider rules for efficient pricing and settlement when operating reserve providers provide congestion relief.

The NYISO is required to maintain flows such that if a contingency were to occur, no transmission facility would be loaded above its Long-Term Emergency ("LTE") rating post-contingency. In some cases, the NYISO is allowed to use operating reserves and other post-contingency operating actions to satisfy this requirement. This allows the NYISO to increase utilization of the transmission system into load centers, thereby reducing production costs and air pollution in those load centers. Since these operating reserve providers are not compensated for helping manage congestion, the market does not provide efficient signals for investment in new and existing resources with flexible characteristics. Hence, we recommend the NYISO evaluate means to efficiently compensate operating reserves that help manage congestion.

Implementing these recommendations would better enable the NYISO energy and ancillary services markets to signal the value of resources that contribute towards satisfying local reliability criteria in New York City and Long Island and help integrate renewable resources.