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President & CEO

June 4, 2015

Hon. Audrey Zibelman, Chairman
New York State Public Service Commission
Three Empire State Plaza, 20th Floor
Albany, New York 12223-1350

Subject: Case No. 14-E-0454 – *In the Matter of New York Independent System Operator Inc.'s Proposed Public Policy Transmission Needs for Consideration: **Why a Robust New York Transmission Grid is Required.***

Dear Chair Zibelman:

This letter is being submitted on behalf the New York Independent System Operator, Inc. ("NYISO") to assist the Public Service Commission ("PSC" or "Commission") with its deliberations in the above-referenced docket. The NYISO, in its capacity as New York's grid operator, planner and wholesale market administrator, summarizes below several critical reasons for reinforcing the AC transmission infrastructure in New York State. As the NYISO has stated in numerous submissions and reports, maintaining and expanding the capabilities of the New York bulk transmission system will be necessary to mitigate a range of risks with a high likelihood of occurrence, including a high potential impact on system reliability and a high cost to consumers. These risks should be considered in the Commission's decision-making process regarding the reinforcement of the New York transmission system.

The benefits of developing a more robust grid in New York fall into the following categories:

- System reliability
- Reducing bottled generation and increasing competition
- Fuel diversity
- Consumer savings
 - ✓ Reduced line losses
 - ✓ Lower installed capacity costs
 - ✓ Reduced congestion and resultant lower energy prices
- Environmental benefits and higher renewable resources penetration

The analyses being conducted by the Brattle Group for the DPS Staff in the AC transmission proceedings will quantify the consumer benefits associated with these transmission upgrades, including reduced transmission losses, reduced congestion, lower energy costs, and lower installed capacity costs.

Reliability: Generation at Risk

Many generating units in Southeast New York (SENY), including several older large steam units, are fast approaching or are already exceeding their useful life expectancies. In fact, nearly 12,000 MW, or over 60%, of generation in SENY will be over 50 years old by 2024. We have already experienced significant forced outages involving some of these larger units this year and last. The age of New York's generation fleet increases the risk that certain power plants may be shut down or retired due to economic, regulatory, or safety reasons. A high number of unit retirements in southeast New York ("SENY") would further stress the New York's already congested transmission system, which would be required to transport more energy from upstate New York (UPNY) resources to the load centers in SENY.

Based on the findings in the NYISO's 2014 Comprehensive Reliability Plan, there are approximately 1,500 MW of surplus generation in downstate in 2016. If Indian Point Energy Center were to become unavailable in 2016, the loss of 2,000 MW capacity in SENY would immediately result in reliability violations. Though there is a significant amount of surplus generation in upstate that could mitigate this issue, the lack of a robust transmission system remains a problem in delivering this capacity to load centers in SENY. There are other large, older steam units in SENY potentially at risk due to their age which could experience a catastrophic failure or leave the market and result in a SENY area deficiency. Further, the Comprehensive Reliability Plan found that the capacity margin in SENY continually shrinks by approximately 200 MW each year, leading to a margin of only 10 MW by the year 2024. Finally, though State programs such as the Clean Energy Fund, Reforming the Energy Vision, and New York SUN hold significant promise to reduce future load levels, the timing of these initiatives and their impact on future system resource needs remain uncertain.

Reducing Bottled Generation and Increasing Competition

Apart from physically stressing the transmission system, large generating unit retirements would also carry economic costs. As discussed in recent NYISO Congestion Assessment and Resource Integration Study (CARIS) reports, the top three congested paths in the state traverse the UPNY-SENY and Central East interfaces due to lower cost upstate and Canadian resources being constrained by limited transmission capability. Any large generating unit retirements in SENY would significantly increase transmission congestion and production costs across the UPNY-SENY and Central East interfaces. This potential impact could effectively be addressed by a major reinforcement and expansion of the 345 kV transmission backbone that runs through Central East and the UPNY to SENY interfaces. In sum, transmission replacement and upgrades appear to be the most prudent way to mitigate the reliability and economic cost impacts of generation at risk in New York.

Expensive out-of-merit generation contracts have to be utilized today in some areas of New York because of the lack of a robust transmission grid. As noted above, we are presently

experiencing periods where one of the State's most important and flexible generation assets -- the Niagara project -- is bottled and cannot be fully dispatched due to transmission limitations. This constraint also limits the ability to schedule low cost imports from Ontario into the New York system. Such limitations between western New York and the rest of the State negatively impact reliability and consumer costs in New York and should be corrected as soon as possible.

Expanding transmission capability between upstate and SENY will also enable more generation suppliers to compete to serve the demands of consumers in SENY. Increasing competition in wholesale energy markets would reduce costs to consumers, reduce the potential for the exercise of market power, and provide opportunities for investors to locate new resources at locations outside of SENY.

Transmission Facilities at Risk

As the New York State Transmission Assessment and Reliability Study ("STARS") report highlighted, New York's aging bulk transmission system poses a significant reliability risk. Of the 11,086 miles of transmission in New York (115 kV and above), the STARS study concluded that nearly 4,700 miles, or over 42%, of the State's transmission will need to be replaced within the next 30 years. In particular, key bulk power transmission lines across the constrained Central East and UPNY-SENY interfaces are due for replacement within the next ten years. The base cost of replacing these facilities in-kind will be required whether or not the system is upgraded. The NYISO urges the Commission to consider the benefits of upgrading the system to enhance transfer capability against the incremental costs of those upgrades.

Physical limitations on the transmission system restrict its ability to freely move electricity from cleaner and more efficient generation resources located in the western and northern parts of New York State to loads in the southeastern part of the State where and when it is needed. In short, many cleaner and less expensive units are "bottled" due to existing constraints. As a result, these constraints create congestion costs by requiring less efficient generation operate. They also cause higher capacity reserve requirements that could be relieved by "un-bottling" upstate generation. The New York State Reliability Council "New York Control Area Installed Capacity Requirement" report for the 2015/2016 period indicates that reducing transmission constraints could reduce New York's capacity reserve requirement by 2.6%. At a peak load of approximately 33,600 MW, this would reduce the State's installed capacity requirement by about 870 MW.

Importantly, additional transmission capability would also increase the resilience of New York's power grid during extreme weather. New York has recently experienced severe weather events where high winds and flooding crippled both generation and transmission. Additional transmission capacity from upstate to downstate would increase the diversity of resources available to southeastern New York and increase the flexibility and resilience of the bulk power system.

While the financial investment required to upgrade and expand the transmission system is not inconsequential, the costs for incremental upgrades would be a fraction of the capital expenditures required to maintain aging facilities through patchworks that do not increase transfer capability. The Indian Point nuclear power facilities have already been the subject of a PSC retirement contingency plan proceeding. It should be recognized that any nuclear unit or plant is subject to an extended outage for events that happen inside or even well outside their footprint. For example, in the 1980s, The Tennessee Valley Authority's ("TVA's") nuclear plants (6,000 MW) were forced to shut down for over five years to meet enhanced safety standards. During this period, a robust internal transmission system with strong interconnections to neighboring systems enabled TVA to maintain system reliability and reduce the costs to its consumers for this extended outage. New York faces many of the same uncertainties going forward.

The EPA's proposed Clean Power Plan ("CPP") under Section 111(d) of the Clean Air Act may result in the closure of all New York's remaining coal units and reduced operating limits for other fossil units. Existing transmission constraints now require New York to rely on less economic generation with higher emissions located in SENY to keep the power system in operation. Such reliance is heightened under local power system reliability requirements in New York City, such as the minimum-oil-burn rules and Thunderstorm Alert procedures. The CPP, as presently drafted, would seriously impair New York's ability to operate critical dual-fuel units when they are needed to maintain system reliability during system peak periods or under emergency conditions. Enhanced upstate/downstate transmission capability would help to address SENY electricity demands if future environmental regulations limit the operation of local fossil-fueled generation.

Fuel Diversity

It is well understood that because of abundant, low cost natural gas, most proposed new generation in New York will be gas-fired. One concern that arises from this phenomenon is the potential over-dependence on natural gas. Adding transmission would mitigate this concern by allowing the State to take better advantage of its fuel diversity. On a statewide basis, New York has a relatively diverse portfolio of generation resources. However, much of that diversity, including hydro, nuclear, and wind generation, is located in upstate New York and Canada, while downstate generation is comprised primarily of fossil units that burn natural gas and fuel oil. Increased transmission capability would increase access to these resources, particularly by SENY loads, and mitigate the potential for overreliance upon a single fuel source.

Environmental Benefits

State and federal environmental and energy policies continue to emphasize the development of new renewable resources, which at higher levels of penetration will require expanded transmission capability to gain access to New York's load centers. Sites for renewable

generation are limited in southeastern New York. The NYISO is already experiencing constraints to the delivery of wind and hydro resources located in UPNY to SENY. Therefore, as noted above, expanding the AC transmission grid as proposed would enable renewable resources in western and northern New York to deliver capacity to the more populous southeastern region of the state. The generating capacity of wind-powered projects in New York grew from 48 MW in 2005 to 1,746 MW in 2014. Projects capable of supplying another 2,300 MW of wind power currently are proposed for future interconnection with the New York bulk electricity grid. All of the existing and proposed wind power capacity is based in western and northern New York.

Plainly stated, absent additional transmission between upstate and downstate, the amount of renewable generation in New York State will be capped well below a level that could be achieved with increased transfer capability. As much as 15,000 MW of additional renewable generation – both wind and solar – may be needed to satisfy the carbon dioxide emission targets contained in the EPA’s CPP rule. Increasing transmission capacity would also make such generation more economic as prices in upstate New York, where most of the renewable resource potential is located, converge with higher-priced areas downstate.

Summary

The cumulative impact of all of the uncertainties outlined above put the reliability of the New York electric system at risk. The exposure to age-related retirements of New York’s generating fleet, increasingly stringent environmental regulations, the expansion of renewable generation upstate, and the aging of New York’s transmission facilities all point out the critical need for investment in the electric transmission infrastructure. Because it will take up to ten years to license and construct these transmission upgrades in existing rights of way , it is vital that the PSC determine that there is a need for transmission upgrades in New York and to expedite its siting of system upgrades.

Sincerely,



Stephen G. Whitley
President & Chief Executive Officer

cc: Hon. Kathleen H. Burgess, Secretary
New York State Public Service Commission
All Parties

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Rensselaer, NY this 4th day of June, 2015.

/s/ Joy A. Zimmerlin

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