New York ISO
Independent System Operator

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December 11, 2020

By Electronic Delivery

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: ***New York Independent System Operator, Inc.*, Docket No. ER21-____-000; Proposed Tariff Revisions to Implement Southeastern New York Reserve Enhancements**

Dear Secretary Bose:

In accordance with Section 205 of the Federal Power Act[1] and Part 35 of the regulations of the Federal Energy Regulatory Commission ("Commission"), the New York Independent System Operator, Inc. ("NYISO") submits proposed revisions to its Market Administration and Control Area Services Tariff ("Services Tariff") to implement certain enhancements to its Operating Reserve procurements.[2]

The NYISO respectfully requests: (i) an order accepting the proposed tariff revisions on or before February 9, 2021 (*i.e.*, sixty days after submission of this filing); and (ii) a flexible effective date for the proposed tariff revisions to be established upon at least two weeks' prior notice.[3]

I. Documents Submitted

The NYISO respectfully submits the following documents with this filing letter:

1. A clean version of the proposed revisions to the Services Tariff ("Attachment I"); and

2. A blacklined version of the proposed revisions to the Services Tariff ("Attachment II").

[1] 16 U.S.C. § 824d.

[2] Capitalized terms not otherwise defined herein shall have the meaning specified in the Services Tariff.

[3] As further described in Section IV below, the NYISO proposes to submit a subsequent filing to the Commission to establish the effective date of the proposed tariff revisions. The effective date for the proposed tariff revisions will occur following deployment of the software changes necessary to implement reserve enhancements proposed herein. The NYISO currently anticipates that the effective date for the proposed tariff revisions will be early- to mid-June 2021.

II. Background

The NYISO has implemented several locational reserve regions to procure various Operating Reserves to meet reliability requirements and other operational considerations. The NYISO currently procures Operating Reserves for the following locational reserve regions: (1) New York Control Area ("NYCA") or statewide (*i.e.*, Load Zones A-K); (2) East of Central-East (*i.e.*, Load Zones F-K); (3) Southeastern New York (*i.e.*, Load Zones G-K); (4) New York City (*i.e.*, Load Zone J); and (5) Long Island (*i.e.*, Load Zone K).[4]

Consistent with New York State reliability rules, the NYISO currently procures 2,620 MW of Operating Reserves statewide.[5] The NYISO procures 1,300 MW of the reserve capability required statewide from resources in Southeastern New York ("SENY") in the form of 30-minute reserves.[6]

The current 1,300 MW requirement for 30-minute reserves in SENY is designed to provide ready access to resource capability to assist with returning transmission facilities to emergency transfer criteria following a contingency.[7] The current SENY 30-minute reserve requirement, however, is not explicitly designed to procure the necessary resource capability to facilitate returning the applicable transmission facilities to normal transfer criteria post contingency.[8] An analysis conducted by the NYISO, assuming summer system conditions with the applicable transmission facilities fully loaded, identified that an additional 500 MW of 30-minute reserves would be needed in SENY to provide ready access to the resource capability required to return flows on the affected facilities to normal transfer criteria post contingency.[9]

The NYISO currently does not explicitly model in its market software the additional SENY 30-minute reserves required to return the applicable transmission facilities to normal

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[4] *See* NYISO, *Locational Reserve Requirements*, available at: https://www.nyiso.com/documents/20142/3694424/nyiso_locational_reserve_reqmts.pdf.

[5] New York State Reliability Council, L.L.C. ("NYSRC"), *Reliability Rules & Compliance Manual: Version 45* at Reliability Requirement E.1-R2, available at: http://www.nysrc.org/PDF/Reliability%20Rules%20Manuals/RRC%20Manual%20V45%20Final.pdf.

[6] The NYISO implemented the SENY reserve region in November 2015. *See* Docket No. ER15-1061-000, *New York Independent System Operator, Inc.*, Proposed Tariff Revisions to Ancillary Service Demand Curves and the Transmission Shortage Cost (February 18, 2015); and *New York Independent System Operator, Inc.*, 151 FERC ¶ 61,057 (2015).

[7] "Emergency transfer criteria" refers to returning flows to below short-term emergency ratings following a contingency on the facilities that accommodate transfers of power from upstate New York into SENY.

[8] "Normal transfer criteria" refers to returning flows on the applicable transmission facilities to below long-term emergency ratings post contingency.

[9] *See* NYISO, *Reserves for Resource Flexibility: SENY Reserve Region Enhancements* (presented at the August 26, 2020 Management Committee meeting) at 18-20, available at: https://www.nyiso.com/documents/20142/14711792/05%20Reserves_for_Resource_Flexibility.pdf.

transfer criteria following a contingency. Instead, such additional reserve capability is satisfied through a combination of the following: (i) the procurement of the other locational reserve products; (ii) reliance on latent reserve capability;[10] and, if necessary (iii) out-of-market action.

Explicitly modeling the additional SENY 30-minute reserves is designed to provide resources with schedules to provide the reserve product, as well as improved price signals reflecting the value of such reserves. More explicit procurement and improved transparency as to the value of these additional 30-minute reserves in SENY is important as technological developments, economic and environmental considerations, and public policies continue to transform the electric grid and resource mix in New York.

III. Description of the Proposed Tariff Revisions

Based on the existing resource fleet and reserve capability available from resources located within the SENY reserve region, the current process for satisfying the reserve capability needed to return transmission facilities to normal transfer criteria following a contingency provides a workable framework. A review of 2019 market data revealed that the procurement of the other locational reserve requirements modeled in the market software resulted in reserve schedules for SENY resources sufficient to meet the current 1,300 MW 30-minute reserve requirement, plus an additional 500 MW of 30-minute reserves in approximately 97% of all Day-Ahead and real-time intervals without accounting for any latent reserve capability.[11] Although workable, the current process for procuring sufficient 30-minute reserves in SENY to facilitate returning transmission assets to normal transfer criteria following a contingency presents opportunities for enhancement.

The NYISO proposes to improve its current process by explicitly modeling in its market software an increase in the otherwise applicable 30-minute reserve requirement in SENY during certain hours of each day.[12] The assessment that identified the need for an additional 500 MW of 30-minute reserve capability in SENY to facilitate returning the applicable transmission facilities to normal transfer criteria following a contingency was conducted assuming that the facilities at issue were fully loaded. Therefore, the need for this additional reserve capability arises when the transmission constraints on such facilities are binding in the market. In response to stakeholder requests, the NYISO conducted a supplemental analysis to determine the frequency with which

[10] "Latent reserves" refer to the unscheduled production capability of resources scheduled to provide energy or ancillary services, measured as the difference between a resource's scheduled output levels (including reserve schedules) and its upper operating limit. Notably, however, latent reserves do not receive a Day-Ahead schedule with respect to the potential need to provide such additional capability.

[11] *See* NYISO, *Reserves for Resource Flexibility: SENY Reserve Region Enhancements* (presented at the August 26, 2020 Management Committee meeting) at 28-29, available at: https://www.nyiso.com/documents/20142/14711792/05%20Reserves_for_Resource_Flexibility.pdf.

[12] Increasing the otherwise applicable 30-minute reserve requirement in SENY during certain hours of each day will not result in any increase to the overall quantity of reserves currently procured by the NYISO (*i.e.*, 2,620 MW). Instead, the proposal provides for greater specificity regarding the locational dispersion of the reserves procured.

the applicable transmissions constraints have been binding in the market.[13] The NYISO utilized this additional information to determine whether the additional 500 MW of 30-minute reserves should be modeled in all hours or further refined.

Based on the results of this analysis, the NYISO proposes to target procurement of the additional reserve quantity within SENY to the hours in which the applicable transmission facilities are more likely to become binding. Accordingly, upon implementation, the NYISO will model the additional 500 MW 30-minute reserve requirement in SENY as effective from 7 a.m. through 10 p.m. each day. To help mitigate the potential for unnecessary, transient price volatility, the NYISO also proposes to transition into and out of the additional requirement by modeling 250 MW of the additional 30-minute reserve requirement in SENY from: (i) 6 a.m. until 7 a.m.; and (ii) 10 p.m. until 11 p.m. The NYISO will not model any additional 30-minute reserve requirement in SENY during the period from 11 p.m. until 6 a.m. The table below summarizes the proposed changes to the current SENY 30-minute reserve requirement that the NYISO will model upon implementation.

Hour(s)	Additional SENY 30-Minute Reserve Requirement	Total SENY 30-Minute Reserve Requirement
Hour Beginning (HB) 00 to HB 05	0 MW	1,300 MW
HB 06	250 MW	1,550 MW
HB 07 to HB 21	500 MW	1,800 MW
HB 22	250 MW	1,550 MW
HB 23	0 MW	1,300 MW

Explicit inclusion of this additional reserve quantity in the market software is intended to: (i) support minimum operating standards for the reliable operation of the bulk electric system; and (ii) provide improved price signals regarding the location-specific value of the reserve capabilities required within SENY. Such explicit modeling also provides the opportunity for improved efficiency in the scheduling of resources through extension of the market's co-optimization of products and services to include the procurement of these additional reserves within SENY. Procurement of these additional reserves also helps support reliable grid operations.

Technological developments, economic and environmental considerations, and public policies are transforming the electric grid and resource mix in New York. Providing transparent price signals that indicate the value of the products and services required within SENY will support the ongoing transformation of the grid. Such transparent price signals also incentivize resources to possess the performance capabilities required to maintain system reliability.[14]

[13] *See* NYISO, *Reserves for Resource Flexibility: SENY Reserve Region Enhancements* (presented at the August 26, 2020 Management Committee meeting) at 22-26, available at: https://www.nyiso.com/documents/20142/14711792/05%20Reserves_for_Resource_Flexibility.pdf.

[14] This proposal is a product of the NYISO's ongoing, multi-faceted initiative to identify, review, and develop market and operational enhancements necessary to address the evolving nature of New York's electric system. *See*, *e.g.*, Docket No. AD18-7-000, *Grid Resilience in Regional Transmission*

Explicitly procuring the additional 30-minute reserves required in SENY to facilitate returning transmission assets to normal transfer criteria post contingency also provides schedules to the resources selected to provide such reserves. Continued reliance on unscheduled latent reserves, as is required in part by the current process, could prove problematic under certain circumstances. Absent the provision of schedules to provide service, resources lack adequate financial incentive to take the necessary actions (including, if applicable, fuel procurement) to make such latent capability available if called upon.

Consistent with current procedures, the NYISO will continue to reduce the applicable SENY 30-minute reserve requirement to zero in real-time during Storm Watch events.[15] The reduction of the otherwise applicable SENY 30-minute reserve requirement to zero will also include any additional 30-minute reserve requirement in SENY that is in effect during a Storm Watch event. The NYISO also proposes to extend this logic to the New York City reserve region requirements implemented in 2019.[16] During Storm Watch events, specific portions of the transmission system that facilitate flows into SENY and New York City from upstate New York are operated in a more conservative manner by reducing transmission transfer limits. These actions essentially result in operating the system to N-1-1 criterion and effectively carrying the required SENY and New York City reserve capability on the transmission system.[17] As a result, maintaining the otherwise applicable reserve requirements for SENY and New York City during Storm Watch events could result in pricing outcomes that do not accurately reflect grid conditions.

Implementation of additional 30-minute reserve procurements in SENY requires revisions to Section 15.4.7 of Rate Schedule 4 of the Services Tariff. The proposed changes revise the Operating Reserve Demand Curve applicable to SENY 30-minute reserves to account for the procurement of additional reserves as proposed herein.

Section 15.4.7(m) describes the 30-minute Operating Reserve Demand Curve for SENY, including adjustments thereto during certain real-time intervals when the NYISO has activated Special Case Resources ("SCRs") and/or the Emergency Demand Response Program

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Organizations and Independent System Operators, Response of the New York Independent System Operator, Inc. (March 9, 2018); and Docket No. AD18-7-000, *supra*, Reply Comments of the New York Independent System Operator, Inc. (May 9, 2018).

[15] Storm Watch events occur during certain actual or anticipated severe weather conditions. *See, e.g.*, Docket No. ER16-425-000, *New York Independent System Operator, Inc.*, Proposed Revisions to Services Tariff and OATT to Implement Improved Scarcity Pricing (November 30, 2015) at 8-9.

[16] In June 2019, the NYISO implemented the New York City reserve region. *See* Docket No. ER19-1678-000, *New York Independent System Operator, Inc.*, Proposed Tariff Revisions to Implement a New York City Operating Reserves Region (April 26, 2019); and Docket No. ER19-1678-000, *supra*, Letter Order (June 21, 2019).

[17] *See* NYISO, *Reserves for Resource Flexibility: SENY Reserve Region Enhancements* (presented at the August 26, 2020 Management Committee meeting) at 31-33, available at: https://www.nyiso.com/documents/20142/14711792/05%20Reserves_for_Resource_Flexibility.pdf.

("EDRP").[18] The Operating Reserve Demand Curves establish maximum Shadow Price costs that the market software will incur in seeking to satisfy the various locational reserve requirements. These reserve demand curves are also intended to represent the escalating value of reserves as the level of resources capable of providing such services decreases. Escalating prices under shortage conditions provides proper economic signals regarding the value of these reliability and resiliency services.

The current 30-minute reserve demand curve for SENY consists of a single "step" that values any shortage in meeting the 1,300 MW reserve requirement for SENY at $500/MWh. The NYISO proposes to revise the SENY 30-minute reserve demand curve to account for the additional 30-minute reserve procurement targets proposed herein. During any period when an additional reserve requirement is effective, the SENY 30-minute reserve demand curve will be adjusted to include an additional "step" that assigns a maximum allowable Shadow Price value of $25/MWh to any shortages in satisfying the applicable additional reserve requirement.[19] Any shortages in satisfying the current 1,300 MW requirement will continue to be valued at $500/MWh.

The proposed $25/MWh value provides a reasonable increment over the otherwise prevailing reserve costs in the less geographically constrained reserve regions within which SENY is nested (*i.e.*, NYCA and East of Central-East) to encourage efficient shifting of reserve schedules to resources located within SENY in response to the additional 30-minute reserve procurements proposed herein. Establishing a lower maximum allowable Shortage Pricing value for any additional 30-minute reserve requirement in SENY recognizes that the reserves procured to facilitate returning transmission assets to emergency transfer criteria post contingency (*i.e.*, 1,300 MW) are of a higher relative priority to the procurement of additional reserves to facilitate returning transmission assets to normal transfer criteria following a contingency.

The NYISO also proposes to revise the descriptions in Section 15.4.7(m) of the adjustments to the SENY 30-minute Operating Reserve Demand Curve during certain activations of SCRs and/or the EDRP that involve Load Zones within the SENY reserve region.[20] The

[18] The first paragraph of Section 15.4.7(m) describes the generally applicable Operating Reserve Demand Curve for SENY 30-minute reserves. The second paragraph of Section 15.4.7(m) establishes the revised Operating Reserve Demand Curve for SENY 30-minute reserves applicable during real-time intervals in which the NYISO has instituted an activation of SCRs and/or the EDRP that includes all of the Load Zones within SENY (*i.e.*, Load Zones G-K) but no other Load Zones. The third paragraph of Section 15.4.7(m) establishes the revised Operating Reserve Demand Curve for SENY 30-minute reserves applicable during real-time intervals in which the NYISO has instituted an activation of SCRs and/or the EDRP that includes less than all Load Zones within SENY but does not include Load Zones outside the SENY reserve region.

[19] As part of a separate initiative to review reserve procurement rules and reserve shortage pricing, the NYISO and its stakeholders are assessing potential future revisions to the shortage pricing value assigned to the additional SENY 30-minute reserve procurements proposed herein.

[20] *See, e.g.*, Docket No. ER16-425-000, *New York Independent System Operator, Inc.*, Proposed Revisions to Services Tariff and OATT to Implement Improved Scarcity Pricing (November 30, 2015); Docket No. ER16-425-000, *supra*, Compliance Filing (March 25, 2016); Docket No. ER16-425-000,

intent of these special procedures is to reflect the costs associated with deploying these demand response resources in real-time prices.

To the extent that an additional 30-minute reserve requirement for SENY 30-minute reserves is in effect during a real-time activation of SCRs and/or the EDRP that impacts the SENY 30-minute Operating Reserve Demand Curve, the proposed revisions maintain the $25/MWh maximum allowable Shadow Price value for such additional 30-minute reserves. The adjusted SENY 30-minute Operating Reserve Demand Curve would account for any applicable Scarcity Reserve Requirement as an incremental quantity within the "step" of the curve that is assigned a $500/MWh maximum allowable Shadow Price value.

Maintaining the $25/MWh maximum allowable Shadow Price value for shortages of any additional 30-minute reserve requirement in SENY effective during an activation of SCRs and/or the EDRP provides consistency with the conditions considered when determining whether to activate these demand response programs in response to forecasts of potential reserve shortage conditions. The NYISO assesses the potential for shortages in meeting the quantity of 30-minute reserves in SENY needed to facilitate returning transmission assets to emergency transfer criteria post contingency (*i.e.*, 1,300 MW) in determining whether to activate SCRs and/or the EDRP to assist in maintaining adequate reserves in SENY. As a result, the NYISO would not seek to activate SCRs and/or the EDRP solely to assist in maintaining adequate reserves to satisfy any additional 30-minute reserve requirement in SENY.

The tables below depict the revisions to the SENY 30-minute reserve demand curve during a real-time interval in which the NYISO has activated SCRs and/or the EDRP for all Load Zones within the SENY reserve region (*i.e.*, Load Zones G-K). The hypothetical example assumes that the SCR and/or EDRP activation: (1) occurs during a period when the 500 MW additional 30-minute reserve requirement is in effect; and (2) results in a 100 MW Scarcity Reserve Requirement.

The first table depicts the structure of the SENY 30-minute reserve demand curve absent the hypothetical activation of SCRs and/or the EDRP. The reserve demand curve consists of the following two "steps": (1) procuring reserve quantities of less than or equal to 1,300 MW at maximum allowable Shadow Price value of $500/MWh; and (2) procuring reserve quantities of greater than 1,300 MW but less than or equal to 1,800 MW at a maximum allowable Shadow Price value of $25/MWh.

The second table depicts the revised SENY 30-minute reserve demand curve during the hypothetical activation of SCRs and/or the EDRP. The total 30-minute reserve requirement for SENY increases to 1,900 MW to reflect the 100 MW Scarcity Reserve Requirement. The reserve demand curve continues to consist of two "steps" with the 100 MW Scarcity Reserve Requirement being added to the "step" assigned a $500/MWh maximum allowable Shadow Price value. The revised reserve demand curve is structured as follows: (1) procuring reserve

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supra, Response to Data Request (May 26, 2016); and *New York Independent System Operator, Inc.*, 154 FERC ¶ 61,152 (2016).

quantities of less than or equal to 1,400 MW at a maximum allowable Shadow Price value of $500/MWh; and (2) procuring reserve quantities of greater than 1,400 MW but less than or equal to 1,900 MW at a maximum allowable Shadow Price value of $25/MWh.

SENY 30-Minute Reserve Demand Curve during a Real-Time Interval with a 500 MW Additional 30-Minute Reserve Requirement and No SCR or EDRP Activation

	SENY 30-Minute Reserve Requirement				SENY 30-Minute Reserve Demand Curve			
Reserve Region	"Baseline" 30-Minute Reserve Requirement (MW)	Additional 30-Minute Reserve Requirement (MW)	Scarcity Reserve Requirement (MW)	Total 30-Minute Reserve Requirement (MW)	Procured Reserve Quantity 1 (MW)	Value 1 ($/MWh)	Procured Reserve Quantity 2 (MW)	Value 2 ($/MWh)
SENY	1,300	500	0	1,800	≤1,300	$500	>1,300 to ≤1,800	$25

SENY 30-Minute Reserve Demand Curve during Real-Time Interval with a 500 MW Additional 30-Minute Reserve Requirement and a SCR and/or EDRP Activation in Load Zones G, H, I, J and K

	SENY 30-Minute Reserve Requirement				SENY 30-Minute Reserve Demand Curve			
Reserve Region	"Baseline" 30-Minute Reserve Requirement (MW)	Additional 30-Minute Reserve Requirement (MW)	Scarcity Reserve Requirement (MW)	Total 30-Minute Reserve Requirement (MW)	Procured Reserve Quantity 1 (MW)	Value 1 ($/MWh)	Procured Reserve Quantity 2 (MW)	Value 2 ($/MWh)
SENY	1,300	500	100	1,900 (1,800+100)	≤1,400 (1,300+100)	$500	>1,400 to ≤1,900	$25

IV. Effective Date

The NYISO respectfully requests that the Commission issue an order accepting the proposed tariff revisions on or before February 9, 2021 (*i.e.*, sixty days after submission of this filing). Such timely action by the Commission will: (i) allow the NYISO to proceed confidently with developing and deploying the software changes necessary to implement the proposed reserve procurement enhancements; and (ii) enable the NYISO to achieve the desired effective date for these proposed changes.

The NYISO respectfully requests approval of a flexible effective date for the proposed tariff revisions. The NYISO proposes to submit a subsequent compliance filing to specify the date on which the revisions will take effect. The NYISO currently anticipates the proposed revisions becoming effective in early- to mid-June 2021. The NYISO, however, will be unable to propose a precise effective date until the software changes necessary to implement the proposed changes are ready for deployment and testing thereof is completed. Consistent with Commission precedent, the subsequent compliance filing obligation will provide adequate notice to the Commission and Market Participants of the effective date for the tariff revisions.[21]

[21] *See, e.g.*, *New York Independent System Operator, Inc.*, 106 FERC ¶ 61,111 at P 10 (2004); Docket No. ER11-2544-000, *New York Independent System Operator, Inc.*, Letter Order at 1 (February 10, 2011); Docket No. ER15-485-000, *New York Independent System Operator, Inc.*, Letter Order at 2

To the extent necessary, the NYISO requests a waiver of the Commission's regulations to allow the NYISO to make this filing more than 120 days prior to the date on which the proposed service is to become operational.[22] No Market Participant will be prejudiced by this request because the NYISO will provide at least two weeks prior notice before the proposed tariff revisions take effect.

V. Stakeholder Process

The Management Committee approved the proposed revisions to the Services Tariff, without opposition, on August 26, 2020. The NYISO Board of Directors approved the proposed tariff revisions on October 20, 2020.

VI. Communications and Correspondence

Please direct all communications and service in this proceeding to:

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VII. Service

The NYISO will send an electronic link to this filing to the official representative of each of its customers, each participant on its stakeholder committees, the New York State Public Service Commission, and the New Jersey Board of Public Utilities. The NYISO will also post the complete filing on its website at www.nyiso.com.

(January 15, 2015); *New York Independent System Operator, Inc.*, 151 FERC ¶ 61,057 at P 20 (2015); and *New York Independent System Operator, Inc.*, 154 FERC ¶ 61,152 at P 19 and 25 (2016).

[22] *See* 18 C.F.R. § 35.3(a)(1).

VIII. Conclusion

The NYISO respectfully requests that the Commission: (i) issue an order accepting the proposed tariff revisions on or before February 9, 2021 (*i.e.*, sixty days after submission of this filing); and (ii) permit the NYISO to subsequently establish the effective date for the proposed tariff revisions upon at least two weeks' prior notice, as described in Section IV above.

Respectfully submitted,

/s/ Garrett E. Bissell
Garrett E. Bissell
Senior Attorney
New York Independent System Operator, Inc.

cc: Jignasa Gadani
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