

June 19, 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., Proposed Tariff Revisions
Addressing Sustainability of Operating Reserves and Energy Storage Resource
Schedules During Reserve Pickups; Docket No. ER20-____-000**

Dear Ms. Bose:

Pursuant to Section 205 of the Federal Power Act,¹ the New York Independent System Operator, Inc. (“NYISO”) hereby proposes certain revisions to its Market Administration and Control Area Services Tariff (“Services Tariff”) to clarify the rules applicable to Energy Storage Resource (“ESR”) provision of Operating Reserves.² This proposal is the result of the NYISO’s continued efforts to integrate ESRs into its Energy and Ancillary Services markets in a manner that is consistent with the rules accepted by the Commission in Docket No. ER19-467-000, *et al.*³

As further explained below, the NYISO proposes to amend Section 4.4.3.1.1 of the Services Tariff (a) to clarify that Resources that offer Operating Reserves must be able to satisfy the energy sustainability requirements set forth in applicable North American Electric Reliability Corporation (“NERC”), Northeast Power Coordinating Council (“NPCC”) and/or New York State Reliability Council (“NYSRC”) reliability requirements, and (b) to explain how NYISO will determine sustainable Energy schedules for ESRs during reserve pickup events.

I. List of Documents Submitted

1. This filing letter;
2. A clean version of the proposed revisions to the NYISO’s Services Tariff Section 4.4.3.1.1 (“Attachment I”); and

¹ 16 U.S.C. § 824d (2012).

² Capitalized terms that are not otherwise defined in this filing letter shall have the meaning specified in Section 1 of the Open Access Transmission Tariff and Section 2 of the Services Tariff, as those terms were revised in the NYISO’s Order No. 841 Compliance Filings in Docket No. ER19-467-000, *et al.*

³ *New York Indep. Sys. Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 (2019).

3. A blacklined version of the proposed revisions to the NYISO's Services Tariff Section 4.4.3.1.1 ("Attachment II").

II. Overview of NYISO ESR Filings

On December 3, 2018, the NYISO submitted a compliance filing in response to Order No. 841 proposing tariff revisions to establish a new participation model for ESRs that recognizes their physical and operational characteristics, and facilitates their participation in the NYISO-administered Energy, Ancillary Services, and Installed Capacity markets.⁴ The NYISO amended its initial filing on May 31, 2019.⁵ On December 20, 2019, the Commission accepted the Compliance Filings in large part, but rejected certain elements of the NYISO's proposal and directed the NYISO to submit a further compliance filing.⁶ The NYISO submitted its third compliance filing on February 18, 2020.⁷ The Commission has not yet ruled on the NYISO's third compliance filing.

On January 21, 2020, the NYISO requested rehearing of the Commission's determination that it must assess transmission charges to ESRs participating in its markets when an ESR is withdrawing Energy for later injection to the grid but is not being dispatched by the NYISO to provide a service in its markets.⁸ The NYISO's rehearing request demonstrates that the rules NYISO proposed in its compliance filing align with its existing rate structure for transmission charges assessed to resources in the New York Control Area ("NYCA") that withdraw energy at a node for later injection in the grid, and explains that the Commission's directive to the NYISO is inconsistent with the approach the Commission accepted for the California Independent System Operator. The Commission has not yet ruled on the NYISO's rehearing request.

The NYISO anticipates that it will be able to deploy and activate the software necessary to implement its ESR Tariff revisions, including the changes proposed in this filing, on a date between August 19, 2020 and September 30, 2020. The NYISO has developed its software applications consistent with the Tariff revisions proposed in its third compliance filing.⁹ The

⁴ *New York Indep. Sys. Operator, Inc.*, Compliance Filing and Request for Extension of Time of Effective Date, Docket No. ER19-467-000 (Dec. 3, 2018).

⁵ The NYISO submitted amendments to the material in its December 2018 Filing to address two implementation issues concerning the ability of electric storage facilities to participate in the NYISO-administered markets as Generators that are Energy Limited Resources. *New York Independent System Operator, Inc.*, Order No. 841 Compliance Filing, Docket No. ER19-467-002 (May 31, 2019).

⁶ *New York Indep. Sys. Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 (2019).

⁷ *New York Indep. Sys. Operator, Inc.*, Compliance Filing, Docket Nos. ER19-467-000, *et al.* (Feb. 18, 2020).

⁸ *New York Indep. Sys. Operator, Inc.*, Request for Rehearing, Docket Nos. ER19-467-000, *et al.* (Jan. 21, 2020).

⁹ With regard to assigning additional transmission-related charges to ESRs, the NYISO is capable of either applying additional transmission charges to ESRs or treating Energy withdrawals by ESRs as negative Generation (consistent with how NYISO has traditionally treated Energy withdrawals by pumped storage). As explained in its January 21, 2020 Request for Rehearing in Docket Nos. ER19-467-

NYISO respectfully requests that the Commission promptly issue Orders addressing its third compliance filing and its rehearing request to assist the NYISO's efforts to implement ESRs in its markets as quickly as practicable, consistent with maintaining reliability.

On April 30, 2020, the NYISO submitted proposed clarifications and revisions for the Commission's consideration under Section 205 of the Federal Power Act. The changes were proposed to better align the operation of the software that NYISO will employ to implement its ESR rules and the tariff revisions it submitted in the Compliance Filings. A letter order accepting the proposed clarifications and revisions was issued on June 17, 2020.¹⁰

This Federal Power Act Section 205 filing addresses a discrete and limited set of concerns related to the need for entities that provide Operating Reserves to be able to sustain their Energy schedules for at least one hour, as explained below.

III. Operating Reserve Requirements

A. NERC, NYSRC and NPCC Requirements

The NYISO procures Operating Reserves to address the loss of Resources and transmission facilities. Certain NERC, NYSRC and NPCC requirements related to maintaining Operating Reserves are identified below. The requirements impact how the NYISO responds after a Resource or transmission facility suffers an outage.

Rule 1 of NERC Standard BAL-002-3 addresses NYISO's obligation to restore its Area Control Error ("ACE") within 15 minutes following a contingency event. It effectively requires the NYISO to restore its ACE to the lesser of zero or its pre-event ACE value if NYISO's ACE was negative prior to the contingency event.

NYSRC Rule C.2 addresses post-contingency operation when a transmission facility is lost. It requires the NYISO to adjust generation, operating reserves and Phase Angle Regulator ("PAR") settings to prepare the system to be able to withstand subsequent contingencies. The rule instructs that adjustments should be made as quickly as possible, but in all cases within 30 minutes after the occurrence of a contingency.

The requirement that is most directly applicable to this filing is set forth in Rule No. 6 of NPCC Regional Reliability Directory #5. It states that a Balancing Authority's synchronized reserve, ten-minute reserve, and thirty-minute reserve, if activated, must be sustainable for at least one hour from the time of activation.

NYCA Resources are expected to manage their Operating Reserve Bids and to only make available reserves that are sustainable for 60 minutes. NYISO expects non-ESR Resources to

000, *et al.*, the NYISO believes the correct decision for its markets is to implement ESR Energy withdrawals as negative generation.

¹⁰ *New York Indep. Sys. Operator, Inc.*, Letter Order, Docket No. ER20-1696-000 (June 17, 2020).

manage this obligation through their Bids, or by calling in a de-rate when necessary. Intermittent Resources are not eligible to provide Operating Reserve. ESRs are addressed below.

B. ESR Operating Reserve Schedules

Under the NYISO's market design and planned software implementation the Real-Time Commitment ("RTC") and Real-Time Dispatch ("RTD") will not award an ESR a real-time Operating Reserve schedule that is greater than the ESR can sustain for 60 minutes. The NYISO will determine an ESR's available Operating Reserves based on the Energy Level (also known as "state of charge") NYISO receives through telemetry. If the telemetered Energy Level NYISO receives is not sufficient to give the NYISO an accurate understanding of an ESR's ability to provide Operating Reserves, then the ESR should inform its local Transmission Owner which will, in turn, inform NYISO Operations.

When the NYISO needs to recover from a significant Resource or transmission element loss in order to timely restore its ACE, the NYISO may enter a reserve pickup.¹¹ During a reserve pickup, the NYISO runs a special RTD-Corrective Action Mode ("RTD-CAM") to re-establish Resource schedules. RTD normally produces an advisory look-ahead schedule that covers an entire hour, but because RTD-CAM needs to issue revised Resource schedules very quickly, it looks ahead (nominally) just 10 minutes.

Because a RTD-CAM for a reserve pickup only covers a 10-minute operating horizon, the RTD-CAM that NYISO runs during a reserve pickup could award an ESR an Energy schedule that it cannot sustain for 60 minutes. This could result in an ESR running out of Energy and not being able to continue following NYISO-issued basepoints during the critical 60-minute recovery period after the loss of a Resource or transmission element. The NYISO's proposed changes to Section 4.4.3.1.1 of its Services Tariff address this concern by enabling the NYISO to assign ESRs Energy schedules that are sustainable for 60 minutes during reserve pickups.

A simplified example illustrating how the current RTD-CAM implementation could have adverse reliability impacts when applied to ESRs during a reserve pickup event is set forth below.

- An ESR with a maximum Energy output of 100 MW has an Energy Level of 17 MWh at the outset of Hour Beginning 15:00.
- At 15:05 RTD assigns the ESR a zero MW Energy schedule and a 17 MW Synchronized Operating Reserve schedule.
 - The 17 MW reserve schedule is sustainable for an hour based on the ESR's Energy Level.
- Then, at 15:06 a 1000 MW NYCA Generator suffers a forced outage and the NYISO initiates a reserve pickup to address the loss of the Resource. The RTD-CAM NYISO

¹¹ See Services Tariff Section 4.4.3.1.1.

initiates (that only considers a 10 minute operating horizon) schedules the ESR to provide 100MW of Energy and increases the output of other NYCA Resources by 900MW over the same period.

- With a 100 MW schedule, the ESR will inject 16.7 MWh over the 10-minute duration of the reserve pickup. The ESR can sustain the 100 MW schedule for 10 minutes, but it will be left with just 0.3 MWh of stored Energy.
- The ESR follows the basepoints it received during the reserve pickup.
- At 15:16 the NYISO ACE has not crossed zero, so the reserve pickup continues. The ESR runs out of Energy and ramps to zero. To make up for the loss of the ESR's Energy, RTD-CAM must immediately ramp-up a different resource.
- This is not an acceptable result for a NYCA Resource that provides Operating Reserves. It violates the Energy sustainability requirement in Rule No. 6 of NPCC Regional Reliability Directory #5, and could leave RTD-CAM significantly resource deficient in a more extreme example that includes multiple ESRs.
- The software change that will implement the Tariff revisions proposed in this filing will limit the Energy award for this ESR during a reserve pickup to 17 MW (2.8 MWh/minute for the 10 minute duration of the reserve pickup), because that Energy schedule is sustainable for 60 minutes.

To address the concern illustrated in the above example, the NYISO proposes to revise Section 4.4.3.1.1 of its Services Tariff in the manner explained below.

IV. Proposed Revisions to Section 4.4.3.1.1 of the Services Tariff

The NYISO proposes to revise Section 4.4.3.1.1 of its Services Tariff as follows:

4.4.3.1.1 Reserve Pickup

The ISO will enter this RTD-CAM mode when necessary to re-establish schedules when large area control errors occur. When in this mode, RTD-CAM will send 10-minute Base Point Signals and produce schedules for the next ten minutes. RTD-CAM may also commit, or if necessary de-commit, Resources capable of starting or stopping within 10-minutes. The ISO will continue to optimize for Energy and Operating Reserves, will recognize locational Operating Reserve requirements and Scarcity Reserve Requirements, but will set all Regulation Service schedules to zero. If Resources are committed or de-committed in this RTD-CAM mode the schedules for them will be passed to RTC and the Real-Time Dispatch for their next execution.

Resources that are eligible to provide Operating Reserves and that are available to the ISO for dispatch in real-time are required to be able to meet

the energy sustainability requirements set forth in applicable NERC, NPCC and/or NYSRC reliability requirements. When the ISO enters a reserve pickup RTD-CAM mode it will determine sustainable Energy schedules for Energy Storage Resources that are eligible to provide Operating Reserves and that are available to the ISO for dispatch based on their telemetered state of charge.

The ISO will have discretion to classify a reserve pickup as a “large event” or a “small event.” In a small event the ISO will have discretion to reduce Base Point Signals in order to reduce transmission line loadings. The ISO will not ordinarily have this discretion in large events, except that it may determine Energy schedules that satisfy Operating Reserve energy sustainability requirements for Energy Storage Resources. The distinction also has significance with respect to a Supplier’s eligibility to receive Bid Production Cost guarantee payment in accordance with Section 4.6.6 and Attachment C of this ISO Services Tariff.

The proposed Tariff revisions reinforce the NYISO’s expectation that all NYCA Resources that are eligible to provide Operating Reserves will be able to satisfy all NERC, NPCC and NYSRC requirements, including the ability to sustain Energy schedules for a minimum of 60 minutes. With regard to ESR schedules during reserve pickups, the proposed Tariff revisions explain that RTD-CAM will determine an Energy schedule that the ESR can maintain based on its telemetered Energy Level. If the NYISO’s system operators ever need to instruct an ESR to produce more Energy during a reserve pickup than the schedule RTD-CAM produces, they will issue an Out-of-Merit dispatch instruction to the ESR.

V. Proposed Effective Date

The NYISO respectfully requests Commission action within sixty days from the date of this filing (*i.e.*, by August 18, 2020) in order to provide the NYISO and Market Participants with timely notice of the Commission’s decision. As explained below, timely action by the Commission may enable to NYISO to make the proposed tariff revisions effective on, or shortly after, the date the NYISO first implements ESRs in its markets.

The NYISO currently anticipates that it will complete all necessary testing and be capable of implementing ESRs in its markets by August 19, 2020. However, even if the NYISO has the necessary Commission approval to implement the proposed Tariff revisions, NYISO would only implement a major enhancement like ESR during the Summer peak season if system conditions permit. The NYCA will need to be experiencing mild weather and moderate loads for the NYISO to implement ESRs in its markets in August of 2020.

The NYISO cannot propose a precise effective date for its proposed revisions to Services Tariff Section 4.4.3.1.1 at this time. Consistent with the flexible effective date that the

Commission granted in Docket No. ER19-467-000, *et al.*,¹² the NYISO respectfully requests a flexible effective date that is no earlier than August 19, 2020 (which is 61 days after the date of this filing) and no later than September 30, 2020, for the Tariff revisions proposed herein.

The NYISO proposes to submit a compliance filing regarding the Tariff revisions proposed in this filing at least two weeks prior to the proposed effective date that will specify the date on which all of the revisions will become effective.¹³ Consistent with Commission precedent, the compliance filing will provide adequate notice to the Commission and Market Participants of the implementation date for the proposed revisions.¹⁴

VI. Stakeholder Approval

The proposed amendments were presented to the NYISO's Management Committee on May 27, 2020 and were unanimously approved. The NYISO's Board of Directors approved the proposed revisions for filing with the Commission on June 16, 2020.

VII. Communications

All communications and correspondence regarding this filing should be directed to:

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Karen Georgenson Gach, Deputy General Counsel
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¹² *New York Indep. Sys. Operator, Inc.*, Order on Compliance Filing, 169 FERC ¶ 61,225 at P 223 (2019); implementation deadline extended by *New York Indep. Sys. Operator, Inc.*, Docket No. ER19-467-000 (Mar. 5, 2020) (Notice of Extension of Time).

¹³ The NYISO is not seeking an expedited decision by the Commission.

¹⁴ *See, e.g., New York Indep. Sys. Operator, Inc.*, 106 FERC ¶ 61,111 at P 10 (2004); Docket No. ER 11-2544-000, *New York Indep. Sys. Operator, Inc.*, Letter Order at 1 (February 10, 2011); Docket No. ER15-485-000, *New York Indep. Sys. Operator, Inc.*, Letter Order at 2 (January 15, 2015); *New York Indep. Sys. Operator, Inc.*, 151 FERC ¶ 61,057 at P 20 (2015).

* -- Persons designated for service.

VIII. Service

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

IX. Conclusion

For the foregoing reasons, the NYISO respectfully requests that the Commission accept for filing the proposed revisions to the Services Tariff that are attached hereto within sixty days of the date of this filing with a flexible effective date that will be specified in accordance with Section V of this filing letter.

Respectfully submitted,

/s/ Alex M. Schnell

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