

December 19, 2024

Submitted Electronically

Honorable Debbie-Anne A. Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: *New York Independent System Operator, Inc.*, Compliance Filing; Docket No.
ER21-2460-00_

Dear Secretary Reese:

On April 20, 2023 the Federal Energy Regulatory Commission (“Commission”) issued its *Order on Compliance* (“April 2023 Order”) in this proceeding requiring the New York Independent System Operator, Inc. (“NYISO”) to permit heterogeneous Aggregations of Distributed Energy Resources (“DER”) to provide all of the Ancillary Services that they are technically capable of providing.¹ The NYISO submits this compliance filing to address the NYISO’s directives in the April 2023 Order.

The market rules proposed in this compliance filing will enable Aggregations containing technically capable DER to provide Operating Reserves and Regulation Service.² The specific type and quantity of Operating Reserves, and the quantity of Regulation Service that an Aggregation will be eligible to provide will depend on the capability of the DER participating in an Aggregation. Specifically, the proposed market rules will (i) create a new sub-category of Aggregations—Operating Reserves-eligible Aggregations—which designates the Aggregation as eligible to provide Operating Reserves; (ii) establish that Operating Reserves-eligible Aggregations may qualify to provide an Operating Reserves product when at least one DER in the Aggregation is technically capable of providing that Operating Reserves product; (iii) cap the maximum amount of Operating Reserves that an Aggregation can provide at the sum of the capability of all DER in the Aggregation that are technically capable and eligible to provide the selected product or a higher quality Operating Reserve product; (iv) enable eligible Aggregations

¹ *New York Indep. Sys. Operator, Inc.*, 183 FERC ¶ 61,035 at P 26 (2023) (“April 2023 Order”). The Commission previously clarified that “technically capable” means that a DER meets “all of the technical, operational, and/or performance requirements that are necessary to reliably provide that service.” *New York Indep. Sys. Operator, Inc.*, 181 FERC ¶ 61,054, at P 14 (2022) (“October 2022 Order”). The NYISO, however, is not required to permit a heterogeneous Aggregation to simultaneously offer multiple Operating Reserves products, which is inconsistent with the NYISO’s DER and Aggregation market design, existing Ancillary Services market rules, and the software the NYISO has developed over the last twenty-five years to implement its Ancillary Services market design. *Id.*

² Capitalized terms that are not otherwise defined in this filing letter shall have the meaning specified in Section 2 of the Services Tariff and Section 1 of its OATT.

containing at least one technically capable DER to provide Regulation Service; (v) update the NYISO's market mitigation rules; and (vi) make other ministerial, clarifying, and conforming revisions related to Aggregation participation in the NYISO-administered markets. The proposed tariff revisions included in this compliance filing are expressly required by the April 2023 Order's directives, necessary to implement or clarify the existing tariff language to accommodate those directives, or are non-substantive clarifying, conforming, or ministerial adjustments.³

The NYISO is in the process of validating the planned software design necessary to implement the market rules proposed in this compliance filing and is on track to complete its internal software specifications in 2025, which will allow for development and deployment of the applicable functionality to support compliance with the April 2023 Order by the end of 2026, which is consistent with the NYISO's deployment of all Order No. 2222 compliance functionality. As described in Part V, the NYISO proposes to make these tariff revisions effective in the fourth quarter of 2026, simultaneously with all tariff revisions required for the NYISO's Order No. 2222 compliance.

I. Communications

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³ The Commission has previously authorized the NYISO to include these kinds of limited, but necessary, clarifications in compliance filings and should follow that precedent here. *See New York Indep. Sys. Operator, Inc.*, 125 FERC ¶ 61,206 (2008), *reh'g*, 127 FERC ¶ 61,042 (2009) (accepting proposed additional tariff revisions that were necessary to implement the modifications directed by the Commission and to correct drafting errors or ambiguities in a compliance filing).

II. List of Documents Submitted

The NYISO submits the following documents with this filing letter:

1. A blacklined version of the NYISO Services Tariff sections containing the proposed compliance modifications (“Attachment I”); and
2. A clean version of the NYISO Services Tariff sections containing the proposed compliance modifications (“Attachment II”).

III. Background

Order No. 2222 requires Regional Transmission Organizations (“RTO”) and Independent System Operators (“ISO”) to enable participation of DER and aggregations in the Commission-regulated competitive markets.⁴ To effectuate this directive, the Commission directed RTOs and ISOs to revise their tariffs to “establish [DER] aggregators as a type of market participant that can register distributed energy resource aggregations under one or more participation models,” and to develop market rules, including market rules for the provision of Ancillary Services, “that accommodate the physical and operational characteristics of each [DER] aggregation.”⁵

A. The NYISO’s First Compliance Filing

On July 19, 2021, the NYISO submitted proposed revisions to its OATT and Services Tariff in compliance with the requirements of Order No. 2222 (“July 2021 Filing”).⁶ The July 2021 Filing proposed that Aggregations be eligible to qualify to provide Operating Reserves and Regulation Service, but that the specific Ancillary Services each Aggregation may qualify to provide depended on the individual DER comprising the Aggregation.⁷

Regarding Operating Reserves, the NYISO proposed that Aggregations be eligible to provide Reserves, but that an Aggregation’s eligibility to provide a particular Operating Reserves product would be defined by (i) the criteria for the particular product and (ii) the characteristics and operating status of the individual facilities within the Aggregation.⁸ Consistent with the existing Operating Reserves qualification requirements for all Resources, the July 2021 Filing proposed:

- (a) Aggregations comprised of one or more generating units and Aggregations that include Demand Side Resources (where at least one Demand Side Resource facilitates its

⁴ *Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 2222, 172 FERC 61,247 (Sep. 17, 2020), 85 Fed. Reg. 70,143 (Nov. 4, 2020); Order No. 2222-A, 174 FERC ¶ 61,197 (Mar. 18, 2021); Order No. 2222-B, 175 FERC ¶ 61,227 (Jun. 17, 2021).

⁵ Order No. 2222 at 4-5. *See also* October 2022 Order at P 14 (stating that “[t]echnically capable” means that a DER meets “all of the technical, operational, and/or performance requirements that are necessary to reliably provide that service,” but does not require the NYISO to permit an Aggregation to offer (Bid) all such services in a single given market interval).

⁶ *New York Indep. Sys. Operator, Inc.*, July 19, 2021 Compliance Filing and Request for Flexible Effective Date, Docket No. ER21-2460-000 (“July 2021 Filing”).

⁷ *Id.* at 17.

⁸ *Id.* at 18.

Demand Reductions by using a Local Generator⁹) may provide Spinning Reserves only if all of the generating units in the Aggregation use inverter-based energy storage technology.

(b) Aggregations containing generating units (including Local Generators facilitating Demand Reductions by Demand Side Resources) that are capable of increasing their supply level within ten minutes may provide 10-Minute Non-Synchronized Reserves.

(c) An Aggregation may provide 30-Minute synchronized reserve when it: (i) meets the requirements for a synchronized reserve product as described in part (a), (ii) is offered as ISO-Committed Flexible or Self-Committed Flexible, and (iii) is operating within the dispatchable portion of its operating range. An Aggregation whose facility mix includes one or more generating units (including Demand Side Resources facilitating Demand Reductions by using a Local Generator) is eligible to provide 30-Minute non-synchronous reserve.¹⁰

The NYISO also proposed that Aggregations be eligible to provide Regulation Service if each of the generating units in the Aggregation used inverter-based energy storage technology.¹¹

B. The Commission's First Order on Compliance

On June 17, 2022, the Commission issued its *Order on Compliance Filing*, finding that the NYISO partially complied with Order No. 2222's requirement to allow DER to provide all of the Ancillary Services that they are technically capable of providing through an Aggregation ("June 2022 Order").¹² Specifically, the June 2022 Order found that "so long as some of the DERs in the Aggregation can satisfy the relevant requirements to provide certain ancillary services (e.g., the one-hour sustainability requirement), we find that those DERs should be able to provide those ancillary services through aggregation."¹³

The June 2022 Order therefore directed the NYISO to submit a further compliance filing proposing market rules that will allow individual DER to provide all of the Ancillary Services for which they are technically capable in a manner that is consistent with applicable reliability requirements.¹⁴ The June 2022 Order could be read as requiring the NYISO to incorporate the availability and operation of individual DER into its real-time commitment and dispatch solution that would be both inconsistent with the NYISO's DER market design and the capabilities of the NYISO's existing Real-Time Commitment ("RTC") and Real-Time Dispatch ("RTD") software.¹⁵ Requiring RTC and RTD to incorporate the operation of individual DER that participate in the NYISO markets as components of an Aggregation would require the software

⁹ Services Tariff § 2.12 (definition of "Local Generator").

¹⁰ July 2021 Filing at 18

¹¹ *Id.*

¹² *New York Indep. Sys. Operator, Inc.*, 179 FERC ¶ 61,198 at PP 92-93 (2022) ("June 2022 Order").

¹³ June 2022 Order at P 93.

¹⁴ *Id.*

¹⁵ *Id.* at PP 92-93. Requiring the RTC and RTD software to issue commitment and dispatch instructions to individual DER within an Aggregation could compromise reliability by introducing new constraints.

to resolve a host of new constraints and potentially delay the timely posting of real-time dispatch instructions.

C. NYISO Request for Clarification and Rehearing

On July 17, 2022, the NYISO submitted a Request for Clarification, or in the alternative, Rehearing, of that portion of the June 2022 Order directing the NYISO to develop market rules that permit heterogeneous Aggregations to provide all of the Ancillary Services that at least one DER in the Aggregation is technically able to provide (“July 2022 Filing”).¹⁶

The NYISO’s requested clarification centered around the June 2022 Order’s statement that “so long as some of the DERs in the Aggregation can satisfy the relevant requirements to provide certain ancillary services (e.g., the one-hour sustainability requirement), we find that those DERs should be able to provide those ancillary services through aggregation,” and directing the NYISO to propose “an effective date by which it will allow DERs in heterogeneous Aggregations to provide all of the ancillary services that they are technically capable of providing through Aggregation.”¹⁷

Under the NYISO’s DER and Aggregation participation model heterogeneous Aggregations may comprise multiple different resource and fuel types (*e.g.*, Demand Side Resources, natural gas fired turbines, solar plants, and wind turbines) with different capabilities and eligibility to provide Operating Reserves. The NYISO’s requested clarification primarily concerned the Commission’s directives in PP 92-93 of the June 2022 Order, which, read expansively, would require the NYISO to permit heterogeneous Aggregations to simultaneously offer (Bid) all of the Operating Reserve products that its component DER would be eligible to provide (*e.g.*, simultaneously offering Spinning Reserve, 10-Minute Non-Synchronous Reserve, and 30-Minute Reserve), which requirement would be inconsistent with the NYISO’s Energy and Ancillary Services Market design, the software that implements the NYISO’s market design, and, potentially, applicable reliability requirements.

The July 2022 Filing explained that the NYISO had already begun an effort to develop market rule and software improvements that would enhance the ability of heterogeneous Aggregations to provide the Operating Reserves that they are technically capable of providing.¹⁸ Specifically, the NYISO proposed that an Aggregator representing a heterogeneous Aggregation be able to choose whether the Aggregation will provide Spinning Reserve (also known as 10-minute synchronized reserves), or 10-Minute Non-Synchronized Reserve, or 30-Minute Reserve during the market registration process.¹⁹ The NYISO explained, however, that even with the proposed enhancements, it would not be possible for the NYISO to permit a heterogeneous

¹⁶ *New York Indep. Sys. Operator, Inc.*, July 18, 2022 Request for Clarification or, in the Alternative, Rehearing, Docket No. ER21-2460-002 (“July 2022 Filing”).

¹⁷ June 2022 Order at P 93.

¹⁸ July 2022 Filing at 2.

¹⁹ *Id.* at 8.

Aggregation to simultaneously make available multiple Operating Reserves products in the Aggregation's offer (Bid).²⁰

The request for clarification concluded by stating that, should the Commission grant the requested clarification that the described market rule improvements satisfied the Operating Reserves requirements set forth in the June 2022 Order, the NYISO would include those market rule improvements in its ongoing efforts to implement DER in its markets.²¹

D. The Commission's Order on Rehearing

On October 24, 2022, the Commission issued its *Order Addressing Arguments Raised on Rehearing*, in which it sustained the result of the June 2022 Order ("October 2022 Order").²² The October 2022 Order clarified, however, that the June 2021 Order "does not require NYISO to allow a heterogeneous Aggregation to simultaneously make available multiple operating reserves products,"²³ but also stated that it could not "prejudge the merits of NYISO's compliance filing in response to the June 17 Order."²⁴

E. The NYISO's Second Compliance Filing

On November 14, 2022, the NYISO submitted its second compliance filing in this docket ("November 2022 Filing").²⁵ The November 2022 Filing explained that the additional guidance provided in the October 2022 Order would assist in the development of market rules for the provision of Ancillary Services.²⁶ The NYISO further advised the Commission that it would develop market rules to permit DER participating in a heterogeneous Aggregation to provide the Ancillary Services that they are technically capable of providing, review them with its stakeholders, and present them for Commission consideration in advance of the planned implementation of the market rules proposed in this docket.²⁷ At the time the NYISO submitted its second compliance filing in this docket it had already begun working on a solution to the Commission's directive as part of market rules it was developing to integrate Hybrid Storage Resources ("HSR").²⁸ In the time since the second compliance filing, the NYISO submitted its

²⁰ *Id.* at 11. Although each Bid is limited to offering one Operating Reserve product, the Services Tariff permits the NYISO to substitute a higher quality Operating Reserve product (*e.g.*, Spinning Reserve) for lower quality Operating Reserves (*e.g.*, 30-Minute Reserve) when doing so results in a lower total bid cost. *See* Services Tariff § 4.2.3.

²¹ *Id.* at 11-12.

²² October 2022 Order at P 13.

²³ *Id.* at P 14.

²⁴ *Id.* at P 15.

²⁵ *New York Indep. Sys. Operator, Inc.*, November 14, 2022 Compliance Filing, Docket No. ER21-2460-003 ("2022 Compliance Filing").

²⁶ *Id.* at 9.

²⁷ *Id.*

²⁸ *See id.* at 9 fn. 45.

proposed rules for HSR, including rules for the provision of Operating Reserves, which the Commission accepted without modification in a Delegated Order.²⁹

F. The Commission's Second Order on Compliance

On April 20, 2023, the Commission issued its second *Order on Compliance Filing* in this docket.³⁰ In the April 2023 Order, the Commission directed the NYISO to “make an additional compliance filing following its stakeholder process, and by no later than December 31, 2024, to address the [Ancillary Services] compliance directive from the [June 2022 Order].”³¹ The Commission further directed the NYISO to submit an informational filing within six months of the April 20, 2023 Order and every six months thereafter to update the Commission on the NYISO's progress.³²

IV. **Description of Proposed Tariff Revisions**

The NYISO submits proposed tariff revisions in compliance with the June 2022 and April 2023 Orders. The market rules proposed in this compliance filing will enable heterogeneous Aggregations to provide Operating Reserves and Regulation Service when at least one DER within the Aggregation is technically qualified to provide the applicable service. The NYISO's market design builds upon the accepted rules the NYISO developed for HSRs,³³ and expands on or tailors the HSR market rules to accommodate the physical and operational characteristics of heterogeneous Aggregations.³⁴ Under the NYISO's proposal, an Aggregation containing at least one DER that is technically capable of providing a given Operating Reserves product and/or Regulation Service will be able to qualify to provide the product(s) and/or service, within the bounds of the NYISO's software capabilities and consistent with applicable reliability requirements.

Because the NYISO proposes to expand the Operating Reserve rules it developed for HSR to also apply to Distributed Energy Resources, the Tariff revisions proposed in this filing modify the accepted, but not yet effective, Tariff language that the NYISO submitted in its HSR filing and the Delegated Order accepted. The NYISO's efforts to develop the software necessary to implement Operating Reserve Limits for HSRs are already well underway. However, in developing its going-forward plans to implement HSRs in its markets and to achieve full Order No. 2222 compliance for heterogeneous DER, the NYISO determined that it can most efficiently

²⁹ *New York Indep. Sys. Operator, Inc.*, Docket No. ER24-2133-000 (July 23, 2024) (unpublished letter order).

³⁰ April 2023 Order.

³¹ *Id.* at P 26.

³² *Id.* The NYISO submitted the required Informational Filings in this docket on October 20, 2023, April 22, 2024, and October 21, 2024.

³³ See *New York Indep. Sys. Operator, Inc.*, May 29, 2024 Proposed Tariff Revisions to Implement Hybrid Storage Resources, Expand Co-located Storage Resource Participation Options and Enhance Fast-Start Resources, Docket No. ER24-2133-000.

³⁴ The NYISO proposes that Aggregations that are entirely comprised of Energy Storage Resources follow the same rules as other Energy Storage Resources when it comes to providing Operating Reserves. See the NYISO's proposed revisions to the definition of “Operating Reserves Limit” in Section 2.15 of the Services Tariff.

and effectively meet its outstanding commitments by developing the Operating Reserve software enhancements needed to enable HSR and heterogeneous Aggregations to provide Operating Reserves together, rather than sequentially (a) developing and implementing the software necessary to permit HSR to provide Operating Reserves, then (b) taking the HSR software the NYISO developed and modifying/expanding it to enable heterogeneous DER to select the Operating Reserve product they will provide. The NYISO anticipates significant efficiency gains by developing comprehensive Operating Reserve software enhancements that address the needs of both HSR and heterogeneous DER.

In order to achieve the expected efficiencies, the NYISO would need to delay implementation of HSR in its Energy and Ancillary Services Markets. Because the Commission granted a flexible effective date no later than December 31, 2025 for the NYISO's HSR rules,³⁵ in the first quarter of 2025 the NYISO anticipates it will submit a filing in Docket No. ER24-2133 requesting permission to delay its implementation of HSR to the extent necessary to enable the NYISO to develop a suite of Operating Reserve software improvements that it can apply to both HSR and heterogeneous DER. The NYISO does not anticipate that Market Participants will be harmed by the proposed delay to HSR implementation in its markets because there were no HSR proposed in the recently completed Application Window for the NYISO's Transition Cluster Study Process. Therefore, it appears unlikely that a HSR will be ready to participate in the NYISO's markets before early-to-mid 2027.

A. Operating Reserves

1. Eligibility to Provide Operating Reserves and Offer Quantities

The NYISO procures three different Operating Reserves products: (i) Spinning Reserve (also known as 10-Minute Synchronized Reserve); (ii) 10-Minute Non-Synchronized Reserve; and (iii) 30-Minute Reserve (which includes both synchronized and non-synchronized components).³⁶ The tariff revisions proposed in this compliance filing will permit an Aggregator of an Operating Reserves-eligible Aggregation³⁷ to provide any Operating Reserves product that at least one DER participating in the Aggregation is technically capable of providing.³⁸ An Aggregation that elects to provide Spinning or 10-Minute Non-Synchronized Reserve may also be selected to provide 30-Minute Reserve.³⁹ This latter proposal is consistent with the NYISO's existing ability to utilize higher-quality Operating Reserves as a substitute for lower-quality Operating Reserves when doing so results in a lower Bid Production Cost.

³⁵ The HSR revisions discussed in this filing are included in Attachments IX through XII of the HSR Filing. The Tariff revisions identified in Attachments I through VII of the HSR Filing have already been made effective.

³⁶ See Services Tariff § 2.15.

³⁷ Proposed revisions to Services Tariff § 2.15 (definition of "Operating Reserves Limit") (stating that "[a]n Aggregation that is subject to an Operating Reserves Limit is referred to as an "Operating Reserves-eligible Aggregation.").

³⁸ Proposed revisions to Services Tariff §§ 2.15 (definition of "Operating Reserves"), 4.2.1.3.1, 4.4.1.2, 4.4.1.3.5, 15.4.1.3.

³⁹ Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2.1.

Aggregators will be eligible to offer Operating Reserves products in both the Day-Ahead Market and Real-Time Market,⁴⁰ and the quantity of Operating Reserves that can be made available will be the composite capability of the Aggregation's DER that are technically capable of providing the selected product.⁴¹ When the composite DER make an Aggregation eligible to offer more than one Operating Reserves product, the Aggregator will be able to choose the product it wishes to provide.⁴² However, an Aggregation may only offer one Operating Reserves product at a given time.⁴³ A DER that is not technically capable of providing an Operating Reserves product will not be permitted to contribute to the Aggregation's qualification to provide Operating Reserves, nor to the capability (in MW) that the Aggregation can provide.⁴⁴ As described in the NYISO's Aggregation Manual, an Aggregator may modify the characteristics of an Aggregation after the Aggregation's initial enrollment.⁴⁵ Such changes include "modifying the Ancillary Service(s) the Aggregation is eligible to provide."⁴⁶ Modification to the Ancillary Service products an Aggregation is eligible to supply may be made during the monthly Aggregation update process as described in the NYISO's Aggregation System User's Guide.⁴⁷

2. *Implementation of Operating Reserves Limits*

To enhance grid operator situational awareness, Operating Reserves-eligible Aggregations, except for Aggregations comprised entirely of Energy Storage Resources, will be required to utilize an offer parameter called an "Operating Reserve Limit" ("ORL").⁴⁸ Originally developed as part of the NYISO's integration of Hybrid Storage Resources ("HSR"), the ORL will be an Aggregation's capability, in MW, to supply Energy for at least one hour if the Aggregation's Operating Reserves schedule is converted to Energy.⁴⁹ The Operating Reserves an Operating Reserves-eligible Aggregation is scheduled to provide (including Out-of-Merit dispatch instructions) will be limited by the Aggregation's ORL that is provided with the

⁴⁰ Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2.

⁴¹ Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2, 15.4.1.3.

⁴² Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2.1, 15.4.2.1.

⁴³ Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2.1.

⁴⁴ Proposed revisions to Services Tariff §§ 4.2.1.3.1, 15.4.1.3.

⁴⁵ New York Indep. Sys. Operator, Inc., Aggregation Manual at § 4.5, *available at*: <https://www.nyiso.com/documents/20142/2923301/M-38-Aggregation-Final-v1-0.pdf/>. Note that all modifications to the Ancillary Services that an Aggregation provides must be approved by the NYISO prior the Aggregation offering the Service(s).

⁴⁶ *Id.*

⁴⁷ New York Indep. Sys. Operator, Inc., Aggregation System User's Guide at § 3.3.1, *available at*: <https://www.nyiso.com/documents/20142/3625950/UG-25-AggSys-v1-0-Final.pdf/>.

⁴⁸ Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2. Aggregations comprised entirely of Energy Storage Resources will follow the rules applicable to Energy Storage Resources. Proposed revision to Services Tariff § 2.15.

⁴⁹ Services Tariff § 2.15 (definition of "Operating Reserves Limit").

Aggregation's Bid.⁵⁰ An Aggregation's ORL must reflect its expected or actual physical or operational limitations, not economic limitations.⁵¹

Aggregations will submit ORLs with their hourly Day-Ahead and Real-Time Market offers and may update (reduce) their ORL after the real-time market close if it is no longer able to provide the Energy necessary to meet its Day-Ahead Operating Reserve award or the ORL the Aggregation submitted with its real-time offer.⁵² Like with HSRs, an Aggregator will be expected to use the NYISO's electronic portal to submit a revised ORL after the real-time market closes for a particular hour.⁵³ Timely updates to the ORL will enable the NYISO's grid operators to use that information in their decision-making. Finally, the NYISO proposes to extend HSR performance tracking and measurement rules to Operating Reserves-eligible Aggregations.⁵⁴

3. Application of Energy Market Physical Withholding Rules and Sanctions

Under the Mitigation Measures set forth in Section 23 of the Services Tariff, the NYISO applies prospective mitigation or assesses an after-the-fact financial penalty when: (a) a Bid or action that violates a Tariff-specified **conduct** threshold occurs, *and* (b) the NYISO determines that the conduct violation caused an **impact** that exceeds one of the Tariff-specified impact thresholds.⁵⁵

The NYISO proposes that Operating Reserves-eligible Aggregations be subject to the physical withholding conduct threshold in Services Tariff Section 23.3.1.1.1.1 that addresses physical withholding by submitting an overstated ORL. For Aggregations comprising only Energy Storage Resource DER (*i.e.*, a single Resource type ESR Aggregation⁵⁶), the test compares an Aggregation's Beginning Energy Level (state-of-charge), or the Aggregation's ramp rate if it is more constraining, to the ORL value the Aggregation submitted.⁵⁷ For all other Aggregations, the test compares an Aggregation's ORL to the minimum of the Operating Reserves-eligible Aggregation's emergency ramp rate multiplied by the time period over which the Operating Reserves would have been scheduled.⁵⁸ Consistent with the rules applicable to other types of Market Parties, Operating Reserves-eligible Aggregations will be subject to sanctions if the ORL violates the conduct threshold identified in Services Tariff Section 23.3.1.1.1.1 and causes a market clearing price impact that exceeds the applicable threshold.⁵⁹

⁵⁰ Proposed revisions to Services Tariff §§ 4.2.3, 4.4.1.2.1, 15.4.2.1, 15.4.3.1.

⁵¹ Proposed revisions to Services Tariff §§ 4.2.1.3.5, 4.4.1.2, 15.4.2.1, 15.4.3.1.

⁵² Proposed revisions to Services Tariff §§ 4.2.1.3.1, 4.2.1.3.5, 4.4.1.2, 4.4.3.1.1.

⁵³ Proposed revisions to Services Tariff § 4.4.1.2, 4.4.1.2.1.

⁵⁴ Proposed revisions to Services Tariff § 15.4.3.5.

⁵⁵ Most (but not all) of the impact thresholds are set forth in Section 23.3.2.1 of the Mitigation Measures.

⁵⁶ See Services Tariff § 4.1.10.1.

⁵⁷ The Aggregation's Beginning Energy Value is not required to be provided to the NYISO in real-time. It will need to be obtained from the Aggregator.

⁵⁸ Proposed revisions to Services Tariff § 23.3.1.1.1.1.

⁵⁹ Proposed revisions to Services Tariff §§ 23.4.3.2, 24.3.3.1.3.

To enable the NYISO to perform its physical withholding analysis, the NYISO proposes a corresponding revision in Services Tariff Section 30.6.2.2. The proposed revision will require Market Parties to retain data or information relating to the operating status of the Aggregation, including information related to the submission of an Operating Limit, for a period of six years, which is the NYISO's standard data retention requirement for such operating data.⁶⁰

B. Regulation Service

Regulation Service is provided by qualified Resources whose output or demand can be raised or lowered as necessary in six-second increments to follow changes in system Load. Generating units, except units utilizing inverter-based energy storage technology, providing Regulation Service must, therefore, be in operation, synchronized to the grid and be capable of responding to six-second dispatch signals in both the up and down direction. In the NYISO's DER and Aggregation participation model, there is no certainty that the next increment of output will be provided by a unit that is currently online and synchronized to the system when an Aggregation comprises more than one generating unit. Therefore, the NYISO's first Order No. 2222 compliance filing proposed that an Aggregation containing one or more generating units would not be eligible to provide Regulation Service unless each of the generating units in the Aggregation used inverter-based energy storage technology.⁶¹

Demand Side Resources are also eligible to qualify to provide Regulation Service. Like Generators, however, if the Demand Side Resource facilitates its Demand Reductions by using an on-site generating unit (*i.e.*, a Local Generator) that generating unit must utilize inverter-based energy storage technology to enable the Aggregation to be eligible to qualify to provide Regulation Service.⁶² For this reason, the NYISO proposed that Demand Side Resources only be eligible to qualify to provide Regulation Service when their Demand Reductions are facilitated through Load curtailment or when using a Local Generator utilizing inverter-based energy storage technology.

In compliance with Order No. 2222 and the June 2022 and April 2023 Orders, the NYISO proposes that Aggregations containing generating units be eligible to qualify to supply Regulation Service so long as (i) at least one of the generating units in the Aggregation is technically capable of providing Regulation Service, *i.e.*, when at least one generating unit in the Aggregation uses inverter-based energy storage technology, and/or (ii) at least one Demand Side Resource in the Aggregation facilitates its Demand Reductions through load curtailment.⁶³ Like with Operating Reserves, the amount of Regulation Service an Aggregation can provide will be the composite capability of the Aggregation's DER that are technically capable of providing Regulation Service.⁶⁴ DER participating in an Aggregation that are not technically capable of

⁶⁰ Proposed revisions to Services Tariff § 30.6.2.2.3.

⁶¹ July 2021 Filing at 18.

⁶² *Id.* at 18-19.

⁶³ Proposed Revisions to Services Tariff § 15.3.

⁶⁴ *Id.*

providing Regulation Service will not be permitted to contribute to the amount of Regulation Service MW that the Aggregation can qualify to provide.⁶⁵

C. Miscellaneous, Conforming, and Clarifying Revisions

In addition to the proposed revisions explicitly addressing the provision of Operating Reserves and Regulation by heterogeneous Aggregations, the NYISO is also proposing a limited number of miscellaneous, conforming, and clarifying revisions applicable to Aggregations and other Resources generally. The proposed tariff revisions (i) clarify the bidding rules for Energy Storage Resources, Aggregations consisting entirely of Energy Storage Resources, and DER Aggregations,⁶⁶ and (ii) make ministerial and textual changes,⁶⁷ which are necessary to implement or clarify the existing tariff language to accommodate those directives, or are non-substantive clarifying, conforming, or ministerial adjustments.

The most voluminous of the revisions provides more precise detail on the Lower and Upper Operating Limit Day-Ahead and Real-Time Market bid parameters for Energy Storage Resources, Aggregations consisting entirely of Energy Storage Resources, and DER Aggregations.⁶⁸ These revisions clarify the requirements applicable to affected Resources utilizing the Self-Managed Energy Level bid parameter.⁶⁹

V. Proposed Effective Date

The NYISO respectfully requests that the Commission accept the proposed tariff revisions within sixty days of this filing, *i.e.*, by February 17, 2025. Commission action by that date will allow the NYISO to confidently proceed with the software design and development that will enable the proposed market rules to become effective simultaneously with the other market rules necessary for the NYISO's compliance with Order No. 2222.

The Commission's June 17, 2022, *Order on Compliance Filing* directed the NYISO to propose an effective date for its Order No. 2222 compliance tariff revisions in the fourth quarter of 2022.⁷⁰ The NYISO subsequently submitted a Motion to Extend Effective Date seeking a

⁶⁵ *Id.*

⁶⁶ Proposed Revisions to Services Tariff §§ 2.12 (definition of "Lower Operating Limit"), 2.14 (definition of "Normal Upper Operating Limit"), 4.2.1.3.1, 4.4.1.2, 4.4.1.2.1, 4.4.2.1 (clarifying that a single Resource type Energy Storage Resource Aggregation will be treated the same as stand-alone Energy Storage Resources, consistent with Services Tariff Sec. 4.1.10.1).

⁶⁷ Proposed Revisions to Services Tariff §§ 4.2.1.3.1, 4.2.3.1.

⁶⁸ *See New York Indep. Sys. Operator, Inc.*, December 3, 2018 Compliance Filing and Request for Extension of Time of Effective Date, Docket No. ER19-476-000 at 23 ("If the Energy Storage Resource only submits Bids to withdraw, the Lower Operating Limit will be the maximum withdrawal level and the Upper Operating Limit will be the minimum withdrawal level. Conversely, if the Energy Storage Resource Submits Bids only to inject, the Lower Operating Level will be the minimum generation level and the Upper Operating Limit will be the applicable maximum injection amount.").

⁶⁹ Proposed Revisions to Services Tariff §§ 4.2.1.3.1, 4.4.1.2.

⁷⁰ June 2022 Order at P 344.

flexible effective date of no later than December 31, 2026.⁷¹ On December 1, 2022, the Commission accepted the NYISO's Motion.⁷²

Consistent with the NYISO's Motion and the Commission's Order granting the NYISO's proposed extension, the NYISO proposes that the tariff revisions submitted with this filing become effective simultaneously with the rest of the NYISO's Order No. 2222 compliance tariff provisions on a date that is no later than December 31, 2026. The NYISO will submit a compliance filing at least two weeks prior to its proposed effective date that will specify the precise effective date for the NYISO's Order No. 2222 compliance tariff revisions, including the revisions proposed in this filing.

VI. Service

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

VII. Conclusion

The New York Independent System Operator, Inc. respectfully submits this filing in compliance with the Commission's June 17, 2022, and April 20, 2023, *Orders on Compliance Filing*.

Respectfully submitted,

/s/ Gregory J. Campbell

Gregory J. Campbell, Senior Attorney
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cc:	Janel Burdick	Douglas Roe
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	Kurt Longo	David Morenoff
	Jason Rhee	Eric Vandenberg

⁷¹ *New York Indep. Sys. Operator, Inc.*, November 14, 2022 Motion to Extend Effective Date of Compliance Tariff Revisions, Docket No. ER21-2460-004.

⁷² *New York Indep. Sys. Operator, Inc.*, Notice of Extension of Time, Docket No. ER21-2460-004 (Dec. 1, 2022).

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 in accordance with the requirements of Rule 2010 of the Rules of Practice and Procedure, 18 C.F.R. §385.2010.

Dated at Rensselaer, NY this 19th day of December 2024.

/s/ Elizabeth Rilling

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