New York ISO
Independent System Operator

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April 18, 2025

Submitted Electronically

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

Re: *New York Independent System Operator, Inc.*'s Proposed Tariff Amendments to Establish the Process to Procure Uncertainty Reserves;
Docket No. ER25-___-000.

Dear Secretary Reese:

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 additional operating reserve procurement requirements throughout the New York Control Area ("NYCA") to account for anticipated forecast uncertainties in both the Day-Ahead Market and Real-Time Market (*i.e.*, "Uncertainty Reserve Requirements").[2] Uncertainty Reserve Requirements will complement and be incorporated into the existing Operating Reserve procurement structure in the NYISO-administered wholesale markets.

The NYISO utilizes Day-Ahead and Real-Time Markets to maintain reliable grid operation. The Day-Ahead Market schedules resources to supply Energy and certain ancillary services, such as Operating Reserves, based on forecasted load ahead of the operating day, while the Real-Time Market adjusts for any deviations that arise on the supply side or the Load side to maintain grid stability. Significant deviations between Day-Ahead schedules and real-time conditions, which can result from forecast uncertainties,[3] may create operational challenges and could introduce reliability concerns. To schedule sufficient flexible resources to facilitate grid reliability, the NYISO proposes to add Uncertainty Reserve Requirements to the existing

[1] 16 U.S.C. § 824d.

[2] Capitalized terms not otherwise defined herein shall have the meaning specified in the Services Tariff. A definition for "Uncertainty Reserve Requirements" is proposed with this filing.

[3] Forecast uncertainties arise in both Load forecasts and Wind and Solar Energy Forecasts. The NYISO utilizes Load forecasts to project expected Load or demand for energy by consumers. The NYISO's Wind and Solar Energy Forecast projects the expected Energy to be supplied over a specified interval of time by Intermittent Power Resources that depend on wind or solar energy as fuel. Both forecasts are used in the NYISO's Energy market commitment and dispatch.

Operating Reserve requirements in both the Day-Ahead and Real-Time Markets. These requirements are intended to help address the inherent forecast uncertainties associated with Load and Intermittent Power Resources that depend on wind or solar energy for fuel.

The NYISO Management Committee ("MC") unanimously approved the proposed revisions on October 31, 2024. The NYISO respectfully requests that the proposed revisions be permitted to take effect as early as June 1, 2026, as discussed further in Section IV below.

I. List of Documents Submitted

The NYISO submits the following documents with this filing letter:

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

2. A blackline version of the proposed revisions to the NYISO's Services Tariff ("Attachment II").

II. Background and Justification

A. Operating Reserves and the New York Control Area

The NYISO has implemented numerous reserve requirements, including NYCA-wide and several locational reserve regions to procure various Operating Reserves to meet reliability requirements and satisfy other operational considerations. The NYISO currently procures Operating Reserves for the following locational reserve regions: (1) 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 Council ("NYSRC") reliability rules and other applicable reliability rules, the NYISO currently procures 2,620 MW of Operating Reserves statewide.[5] Reliability rules require that 1,310 MW of this current total statewide reserve requirement (*i.e.*, an amount sufficient to replace loss of the current largest single contingency) be comprised of 10-minute reserves.[6] One-half of the 10-minute reserves required statewide (*i.e.*, 655 MW) are further required to be comprised of 10-minute synchronized or spinning reserves.[7] To facilitate the availability of sufficient resource capability to restore

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

[5] NYSRC, *Reliability Rules & Compliance Manual: Version 47* at Reliability Requirement E.1-R2b, available at: https://www.nysrc.org/wp-content/uploads/2024/07/RRC-Manual-V47-final-7-2-24.pdf.

[6] *Id.* at Reliability Requirement E.1-R2a.

[7] *Id.* at Reliability Requirement E.1-R3.1.

transmission flows to within applicable ratings following a design transmission contingency, 1,200 MW of the total statewide 10-minute reserve requirement is procured from resources located within the East of Central-East reserve region ("East").[8] To assist with ensuring the capability to respond to the loss of transmission or generation within the Southeastern New York ("SENY") region, 1,300 MW to 1,800 MW of reserve capability required statewide is procured from resources in SENY in the form of 30-minute reserves.[9] Finally, to satisfy reliability rules, the NYISO procures: (i) 1,000 MW of its reserves within New York City ("NYC"), inclusive of the 500 MW of 10-minute NYC reserve requirement; and (ii) 270 MW to 540 MW of its reserves within Long Island ("LI"), inclusive of the 120 MW of 10-minute LI reserve requirement.[10] The current Operating Reserves requirements are explicitly based on the need to prepare for generator and transmission contingencies.

The NYISO utilizes Day-Ahead and Real-Time Markets to facilitate reliable grid operations by efficiently balancing electricity supply and demand. The Day-Ahead Market provides binding schedules and compensation to resources ahead of the operating day, allowing Market Participants sufficient advance notice to prepare for and to meet their obligations. This forward scheduling enhances reliability by committing resources in advance and reducing uncertainties where possible. The Real-Time Market complements the forward schedules by addressing any deviations that arise from the Day-Ahead solution. The Real-Time Market enables Load and Supply adjustments on short notice to accommodate changes in demand or generation and to respond to uncertainties, thereby maintaining grid stability and operational reliability.

B. Forecasting and Forecast Errors in the New York Control Area

The NYISO utilizes statewide Load forecasts[11] and Wind and Solar Energy Forecasts[12] to execute the Day-Ahead Market and it uses Wind and Solar Energy Forecasts to execute the real-

[8] *Id*. at Reliability Requirement C.1-R1 (see Table C-2).

[9] The NYISO implemented the SENY reserve region and its associated reserve requirements in November 2015 and implemented enhancements to the SENY reserve requirements in June 2021. *See, e.g.*, 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); *New York Independent System Operator, Inc.*, 151 FERC ¶ 61,057 (2015); Docket No. ER21-625-000, *New York Independent System Operator, Inc.*, Proposed Tariff Revisions to Implement Southeastern New York Reserve Enhancements (December 11, 2020) and *New York Independent System Operator, Inc.*, Docket No. ER21-625-000, unpublished letter order, (January 28, 2021).

[10] NYSRC, *Reliability Rules & Compliance Manual: Version 47* at Reliability Requirement C.1-R1 (see Table C-2) and Reliability Requirement G.1-R3, available at: https://www.nysrc.org/wp-content/uploads/2024/07/RRC-Manual-V47-final-7-2-24.pdf. The NYISO implemented the New York City reserve region and its associated reserve requirements in June 2019. *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*, unpublished letter order, (June 21, 2019).

[11] *See* Services Tariff Section 4.2.2, "By 8 a.m., or as soon thereafter as is reasonably possible, the ISO will develop and publish its statewide Load forecast on the OASIS. The ISO will use this forecast to perform the SCUC for the Dispatch Day."

[12] *See* Services Tariff Section 2.23 (definition of "Wind and Solar Energy Forecast"): The ISO's forecast of Energy that is expected to be supplied over a specified interval of time by an Intermittent Power Resource that

time commitment and dispatch processes. These existing forecasts play a critical role in committing generation Day-Ahead to serve expected Load and produce reasonable expectations around the amount of electric generation expected from Intermittent Power Resources that depend on wind or solar energy for fuel. However, significant deviations between the conditions anticipated in the Day-Ahead Market and the conditions that materialize in real-time can create challenging operating conditions. For instance, if real-time Load is higher than forecasted, or real-time supply is lower than forecasted, the Day-Ahead Market will not necessarily have committed sufficient generation resources to serve actual Load while maintaining required contingency reserves. Real-time conditions can differ from Day-Ahead forecast conditions due to a variety of reasons, including, but not limited to, demand forecast errors, Intermittent Power Resource forecasting errors, or unexpected outages. Depending on the disparity between the Day-Ahead expectations and the actual, real-time conditions, challenges may arise in real-time to commit and dispatch the additional resources necessary to serve the immediate demand and satisfy other reliability rules (*e.g.*, procuring Operating Reserves). The risk of significant deviations exists today and is likely to increase in New York as electricity demand grows (*e.g.*, future electricity demand in New York is anticipated over time in response to changes such as electrification of transportation and building sectors of the state's economy) and more Intermittent Power Resources enter service. This mismatch can lead to operational difficulties, increased reliance on emergency procedures, and potential reliability risks.

The NYISO observes that, in addition to generation and transmission contingencies, forecast errors create circumstances when Energy requirements in real-time are greater than those considered in the Day-Ahead Market. That is, forecast errors create uncertainty and increase the difficulty of producing a Day-Ahead Market solution that procures sufficient resources to serve real-time demand. Increasing Load and generation from Intermittent Power Resources are both heavily dependent on weather conditions and can drive larger forecast errors. As a result, changes in the weather from one day to the next or within a single day, especially unpredicted weather changes, can have a significant impact on the electric system. Weather changes can increase or decrease Load and weather changes can significantly reduce the weather-dependent generation availability. Forecast errors are inherently random and cannot be accurately predicted in the Day-Ahead timeframe due to the complex nature of the power system and the multitude of variables that impact system conditions. While the NYISO is actively and continually pursuing improvements in forecasting methods and techniques to reduce these errors, it is impossible to eliminate them entirely.[13] Therefore, it is necessary to be prepared to operate the grid in the presence of the risk presented by forecast errors.

The NYISO evaluated the magnitude of Day-Ahead Market hourly forecast errors associated with "net Load" (*i.e.*, Load net of behind-the-meter ("BTM") solar generation) and

depends on wind or solar energy as its fuel and which is used in ISO's Energy market commitment and dispatch. The Wind Energy Forecast does not include a forecast of Energy for Intermittent Power Resources depending on wind as its fuel that participate in a DER Aggregation.

[13] Importantly, the NYISO's proposal automatically adjusts to improvements in forecasting accuracy. If forecasting accuracy improves over time, the NYISO's proposal will automatically incorporate those improvements and set lower Uncertainty Reserve Requirements.

land-based wind production for 2021-2022.[14] The analysis observed several hourly instances with forecast errors exceeding the size of the NYCA's current largest single contingency (*i.e.*, 1,310 MW), and real-time Energy needs exceeding Day-Ahead schedules by over 650 MW in 5% of intervals. In roughly half of the hourly instances with large forecast errors, the NYISO had to convert Operating Reserve schedules into Energy schedules in real-time (*i.e.*, resulting in a need to procure sufficient replacement reserves in real-time or reserve shortage periods). The NYISO also observed that the forecast errors correlate with a higher frequency of operator interventions. In 2021-2022, operator actions (*e.g.*, Supplemental Resource Evaluation commitments) were ten times more likely to occur during multi-hour intervals of high forecast errors than during multi-hour intervals of low forecast errors. Further, during 2021 and 2022, the NYISO initiated 142 "reserve pick up" events.[15] Nearly one-third of these reserve pick up events occurred during the top 5% of multi-hour forecast error events.[16] The NYISO also observed during this period that reserve shortages occurred more frequently during the top 5% of the multi-hour forecast error events compared to shortages occurring during the other 95% of the multi-hour forecast error events.

The NYISO expects forecasting uncertainty may increase as more Intermittent Power Resources continue interconnecting to the NYCA.[17] Current levels of intermittent resources are significant, with almost 3 GW of land-based wind and approximately 6 GW of BTM solar.[18] These levels are expected to increase significantly over time as additional Intermittent Power Resources seek to interconnect in New York and Energy production from these resources continues to grow.

[14] The New York Control Area had a small amount of wholesale solar at this time and thus wholesale (or "front-of-the-meter") solar was not included.

[15] A "reserve pick up" ("RPU") event is essentially the system operator's deployment of reserves in response to real-time conditions—most notably when the grid requires extra support to maintain reliable operation. RPU events are triggered by operators in response to a system need that is not adequately resolved by the existing Real-Time Commitment or Real-Time Dispatch software. Conceptually, an RPU event is NYISO's mechanism to tap into standby capacity quickly, ensuring that the system remains in balance and within applicable reliability standards.

[16] The top 5% of multi-hour forecast error events are measured by events with the largest magnitude of forecast error over at least two hours and falling at or above the 95th percentile of multi-hour forecast error magnitude.

[17] Uncertainty and forecast errors are not unique to New York. Grid operators across the country are managing the emergence of greater Load variability and the intermittency of renewable energy generation. For example, California Independent System Operator has implemented a flexible ramping product for its real-time market and an imbalance reserve product for its day-ahead market to account for forecast uncertainty. Southwest Power Pool has implemented an uncertainty product to meet variability and uncertainty needs at a one-hour horizon and a ramp product to assist with net load variability issues over a shorter timeframe. Midcontinent Independent System Operator has implemented a short-term reserve product to handle system uncertainties, which includes net load uncertainty and variability needs. *See Wholesale Electricity Market Design in North America: Reference Guide: Volumes I and II: 2023 Review.* EPRI, Palo Alto, CA: 2024. 3002030657.

[18] Assuming a constant forecast error rate (%), increasing intermittent energy output will increase the magnitude of real-time uncertainty.

C. Overview of the Uncertainty Reserves Requirement

Access to sufficient capability of flexible resources, including reserves, is of paramount importance and must be available to keep pace with increasing demand for electricity and reliance on weather-dependent renewable generation.[19] Implementing a market-based process to establish reasonable reserve procurement levels in excess of minimum reliability requirements will safeguard the NYISO's ability to maintain system reliability in an economically efficient manner.

To address uncertainty associated with net Load and intermittent resources, the NYISO proposes to introduce additional reserve requirements as a component of its existing reserves structure. These additional reserve requirements will be called Uncertainty Reserve Requirements. These requirements will complement existing reserve requirements by procuring reserves to address forecast errors where and when they arise. Such additional reserves will help ensure the NYISO can maintain system balance given the variability in Load forecasts and generation from Intermittent Power Resources. The proposed Uncertainty Reserve Requirements will be procured in both the Day-Ahead and Real-Time Markets based on the historical measured forecast errors associated with each market. The Uncertainty Reserves Requirement will formulaically determine a quantity of additional reserves needed to manage the uncertainty observed on the electric grid.[20] Importantly, the procurements will be market based, to send the appropriate price signals to attract and retain the resources needed to reliably operate the grid and appropriately value the flexibility and dispatchability offered by such resources.

Uncertainty Reserve Requirements are Operating Reserves needed to account for the uncertainty associated with two critical forecasts that directly impact resource commitments in the NYISO-administered Energy markets: (1) Load forecasts and (2) Wind and Solar Energy Forecasts. Uncertainty Reserve Requirements will be calculated for, and apply to, both the Day-Ahead and Real-Time Markets. Uncertainty Reserve Requirements will be calculated prior to each operating day using (1) historical measured forecast errors and (2) forecasts of Load and

[19] The NYISO procures reserves in its Day-Ahead Market on an hourly basis and in the Real-Time Market nominally every five minutes. Reserve schedules for resources are determined through the market co-optimization based on the available capability of the individual resource. Procuring additional reserves is intended to efficiently provide the NYISO with additional dispatch flexibility to support system reliability.

[20] Access to sufficient quantities of flexible resources to address these challenges is of paramount importance as society relies more heavily on electric power and the level of reliance on weather-dependent generation in New York increases. The NYISO's 2024 Reliability Needs Assessment ("RNA") identified a violation of reliability criteria in New York City in 2033, driven by a combination of factors, including the expected deactivation of certain flexible natural gas plants in New York City and Long Island. According to the findings of the 2024 RNA, the reliability need is 17 MW in summer 2033 and increases to 97 MW in summer 2034. The potential risks and reliability needs identified in the 2024 RNA may be resolved by new capacity resources coming into service, construction of additional transmission facilities, increased energy efficiency, integration of distributed energy resources and/or growth in demand response participation. If forecast errors increase, the reliability need would also expand, necessitating a greater focus on procuring the resources needed to maintain system reliability. The proposed Uncertainty Reserves Requirements are intended to provide market signals to identify when and where flexible resources are needed to support electric system reliability. The NYISO's 2024 RNA is available at https://www.nyiso.com/documents/20142/2248793/2024-RNA-Report.pdf.

Wind and Solar Energy Forecasts for the applicable operating day. Historical measured forecast errors will be calculated using measured forecast error data (comparing, as applicable, the relevant Day-Ahead or real-time forecast to actual conditions) in the preceding year. Load forecasts and the Wind and Solar Energy Forecast will be those used in the applicable Day-Ahead or Real-Time Market run for which the Uncertainty Reserve Requirements are determined.

In the Day-Ahead Market, the Uncertainty Reserve Requirements will only be included in the calculation of the 30-Minute Reserve requirement for each applicable reserve location.[21] The Uncertainty Reserve Requirement is limited to the 30-Minute Reserve product in the Day-Ahead Market because forecast uncertainty will not materialize for a number of hours and thus a 30-minute response time is sufficient to respond to such needs. In the Real-Time Market, the Uncertainty Reserve Requirements will be included in the calculation of 10-minute reserve and 30-Minute Reserve requirements.[22] In the real-time, forecast uncertainty can materialize in less than 30 minutes or on a longer horizon, thus both 10-minute reserves (*i.e.*, for uncertainties in forward horizons of less than 30 minutes) and 30-Minute Reserves (*i.e.*, for uncertainties with longer lead times) are necessary to manage uncertainty in the Real-Time Market.

Both Day-Ahead and real-time Uncertainty Reserve Requirements appropriately account for the correlation between forecast errors for Load and the Wind and Solar Energy Forecast. This avoids over-procurement of reserves. The general formulation for an Uncertainty Reserve Requirement is to achieve a 95 percent probability that the quantity of uncertainty reserves procured through the market would be sufficient to offset the net effect of uncertainty associated with Load forecasts and Wind and Solar Energy Forecasts. The NYISO will use general statistical analysis practices to determine the mean and standard deviation for the prior calendar year's net Load forecast errors and Wind and Solar Energy Forecast errors. The NYISO's Market Monitoring Unit, Potomac Economics, has authorized the NYISO to indicate that it supports the proposed method for developing Uncertainty Reserve Requirements based on the expected distribution of wind, solar, and load forecast errors.

Uncertainty Reserve Requirements will allow the NYISO to schedule resources in the Day-Ahead and Real-Time Markets to cover potential deviations between forecast and actual conditions, thereby helping ensure an adequate pool of flexible generation capability is ready to serve real-time Load if conditions differ from what was anticipated. By establishing a pricing mechanism for these reserves, the NYISO creates a clear economic incentive for resources capable of ramping quickly or adjusting output on short notice, encouraging increased flexibility in resource commitment. This market-based approach is expected to be more efficient than relying on out-of-market actions, latent reserves, or reserve shortages because it transparently values and compensates the incremental reserves needed from dispatchable resources to respond to in-day variability.

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

[22] *Id.*

As part of its design validation, the NYISO measured the effectiveness of its proposal using sample testing. First, the NYISO determined historical forecast error values using 2021 data and calculated 95th percentile Uncertainty Reserve Requirement values for the Day-Ahead Market for each hour of 2022 using the 2021 forecast error values and the 2022 net Load forecasts and Energy forecasts for wind resources. This testing essentially replicated how the Uncertainty Reserve Requirement will be calculated in the Day-Ahead Market. Then, the NYISO determined whether Operating Reserve procurements to satisfy the calculated Uncertainty Reserve Requirements were sufficient to manage the realized uncertainty (forecast value relative to the actual value) that occurred in the sample test data. The analysis demonstrated that the Uncertainty Reserve Requirement design scheduled sufficient incremental Operating Reserves to manage slightly more than 95 percent of realized forecast error uncertainty, *i.e.*, almost exactly the target level expected with a 95th percentile Uncertainty Reserve Requirement.

III. Description of Proposed Revisions to the Services Tariff

The proposed tariff revisions consist of two primary components. First, the NYISO proposes a formulaic process to define an Uncertainty Reserve Requirement, which will be added to the existing Operating Reserve requirements and procured through the NYISO's existing Energy and Ancillary Services co-optimization within the Day-Ahead Market and Real-Time Market. Uncertainty Reserve Requirements will be added to existing NYCA and locational minimum reliability requirements for Operating Reserves, *i.e.*, Day-Ahead 30-Minute Reserves, real-time 30-Minute Reserves, and real-time 10-minute reserves. These Uncertainty Reserve Requirements will be calculated before each Day-Ahead Market run and will apply for every hour of the applicable Day-Ahead Market day and the Real-Time Market day. Second, the NYISO proposes revisions to the existing Operating Reserve Demand Curves to introduce a pricing step associated with Operating Reserves procured to satisfy an Uncertainty Reserve Requirement.[23]

A. Services Tariff Section 2.21

The NYISO proposes to add a definition of "Uncertainty Reserve Requirements" to Services Tariff Section 2.21. Uncertainty Reserve Requirements will be defined as:

> A component of the Operating Reserves requirements in the Day-Ahead and Real-Time Markets to address the uncertainties of Load forecasts and the Wind and Solar Energy Forecasts. The Uncertainty Reserve Requirements will be calculated each day before the Day-Ahead Market close and will apply to the 24-hours of the Day-Ahead Market day and the corresponding Real-Time Market day.

[23] 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 facilitate proper economic signals regarding the value of these reliability services.

> Uncertainty Reserve Requirements will be calculated pursuant to ISO Procedures using historical forecast error metrics and Day-Ahead Market forecast information.

B. Services Tariff Section 15.4.1

Services Tariff Section 15.4.1.1 describes the NYISO's responsibilities to procure, on behalf of Customers, sufficient Operating Reserves to comply with Reliability Rules and other applicable reliability standards. The NYISO proposes to revise Services Tariff Section 15.4.1.1 to indicate that the NYISO will also procure Operating Reserves, on behalf of its Customers, to comply with the rules set forth in Rate Schedule 4 (*i.e.*, Services Tariff Section 15.4), including Operating Reserves that will satisfy the Uncertainty Reserve Requirements.

C. Services Tariff Section 15.4.7

Services Tariff Section 15.4.7 describes the NYISO's Operating Reserve Demand Curves. The NYISO proposes to revise this Section to describe how the Uncertainty Reserve Requirements will be set and how Operating Reserves procured to satisfy Uncertainty Reserve Requirements will be added to and priced under the existing demand curve construct.

The proposed revisions obligate the NYISO to calculate and apply the Uncertainty Reserve Requirements to both the Day-Ahead Market and the Real-Time Market. In each market, the Uncertainty Reserve Requirements are set to achieve a 95 percent probability that the quantity of uncertainty reserves would be sufficient to offset the net effect of uncertainty associated with Load forecasts and Wind and Solar Energy Forecasts. Uncertainty Reserve Requirements for the Day-Ahead and Real-Time Markets for each location are calculated for each hour of the Dispatch Day before the Day-Ahead Market runs (*i.e.*, before 5:00 a.m. the day before the Dispatch Day).

Day-Ahead Uncertainty Reserve Requirements are a function of an annually determined NYCA Day-Ahead forecast error metric and the Day-Ahead Market forecast data for the relevant location. In the Day-Ahead Market, the calculated Uncertainty Reserve Requirement for a given reserve location will be added to the applicable 30-Minute Reserve requirement for each hour of the Dispatch Day.

In the Real-Time Market, the proposed tariff revisions obligate the NYISO to determine both 30-minute and 10-minute Uncertainty Reserve Requirements. Uncertainty Reserve Requirements added to the 30-Minute Reserve requirements are a function of an annually determined NYCA 60-minute ahead forecast error metric and the Day-Ahead Market forecast data for the relevant location. The real-time 30-minute and 10-minute Uncertainty Reserve Requirements are calculated for the entire Dispatch Day for each location, except for SENY 10-minute reserves. Uncertainty Reserve Requirements added to the 10-minute reserve requirements are a function of an annually determined NYCA 30-minute ahead forecast error metric and the Day-Ahead Market forecast data for the relevant location.

i. Operating Reserve Demand Curve Modifications for Uncertainty Reserve Requirements

The NYISO proposes to revise Services Tariff Section 15.4.7 to incorporate Uncertainty Reserve Requirements into each Operating Reserve Demand Curve. When Operating Reserves are priced pursuant to the applicable Operating Reserve Demand Curve, the NYISO proposes to price the quantity of Operating Reserves meeting an Uncertainty Reserve Requirement based on the following shortage pricing values in all reserve regions. These shortage price values were chosen to be lower than existing price steps to value the Uncertainty Reserves at a lower priority than Operating Reserves procured to satisfy other reliability requirements that NYISO is required to follow. The following shortage price values are included in the proposed revisions to Services Tariff Section 15.4.7:

- NYCA 30-minute reserves = $20/MWh
- East 30-minute reserves = $40/MWh
- SENY 30-minute reserves = $40/MWh
- NYC 30-minute reserves = $20/MWh
- Long Island 30-minute reserves = $20/MWh
- NYCA 10-minute total reserves = $40/MWh
- East 10-minute total reserves = $40/MWh
- NYC 10-minute total reserves = $20/MWh
- Long Island 10-minute total reserves = $20/MWh

D. Interaction of Uncertainty Reserves with Scarcity Reserve Requirements

The NYISO also proposes revisions to the current scarcity pricing rules throughout Services Tariff Section 15.4.7 to address the procurement of 30-Minute Operating Reserves meeting the Uncertainty Reserves Requirement.[24] For locations affected by SCR/EDRP activations, the NYISO will procure sufficient Operating Reserves to meet the greater of the applicable 30-minute Uncertainty Reserve Requirement or the applicable Scarcity Reserve Requirement in each such affected location. As such, reserves procured to satisfy any applicable Scarcity Reserve Requirement will simultaneously serve to meet any applicable 30-minute Uncertainty Reserve Requirement. If the applicable 30-minute Uncertainty Reserve Requirement for an affected location exceeds the applicable Scarcity Reserve Requirement for such region, the NYISO would maintain the proposed uncertainty reserves shortage pricing value

[24] During Special Case Resource ("SCR") program activations and/or Emergency Demand Response Program ("EDRP") activations, the NYISO utilizes special pricing rules for Operating Reserves (commonly referred to as "scarcity pricing" rules). The intent of these special procedures is to reflect the costs associated with deploying these demand response resources in real-time prices. These provisions alter the otherwise applicable reserve requirements and the Operating Reserve Demand Curves in real-time for the locational reserve regions impacted by a demand response program activation. *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, *supra*, Response to Data Request (May 26, 2016); and *New York Independent System Operator, Inc.*, 154 FERC ¶ 61,152 (2016).

for only the quantity of a 30-minute Uncertainty Reserve Requirement that exceeds the applicable Scarcity Reserve Requirement(s).

IV. Effective Date

The NYISO respectfully requests that the Commission issue an order accepting the tariff revisions proposed in this filing on or before June 17, 2025 (*i.e.*, sixty days after submission of this filing) with a flexible effective date. The NYISO currently anticipates that the proposal may be implemented as early as June 1, 2026.[25] The NYISO cannot propose a more precise effective date until the software changes necessary to implement the proposed tariff revisions are finished, adequately tested, and the software deployment is scheduled. The NYISO proposes to submit a notice at least two weeks prior to the proposed effective date that will specify the date on which the revisions will take effect. Consistent with Commission precedent, the subsequent submittal will provide adequate notice to the Commission and Market Participants of the implementation date for the revisions proposed herein.[26]

The NYISO also 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 tariff revisions are to become operational.[27] No Market Participant will be prejudiced by this request because the NYISO has informed stakeholders of the anticipated implementation timeframe for this proposal. Submitting the proposed tariff revisions now will provide more certainty of the upcoming market rule changes for the NYISO and its stakeholders. This certainty will allow the NYISO to proceed more confidently with software development efforts.

V. Stakeholder Approval

The Management Committee unanimously approved the revisions to the Services Tariff on October 31, 2024. The NYISO Board of Directors approved the proposed tariff revisions on November 19, 2024.

[25] The NYISO intends to implement the proposed revisions between June 1, 2026 and December 31, 2026, subject to Commission acceptance of this filing and the notice discussed further in Section IV.

[26] *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); *New York Indep. Sys. Operator, Inc*., 170 FERC ¶ 61,033 at P 34 (2020).

[27] *See* 18 C.F.R. § 35.3(a)(1).

VI. Correspondence

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

Robert E. Fernandez, Executive Vice President, General Counsel & Chief Compliance Officer
Karen G. Gach, Deputy General Counsel
Raymond Stalter, Director, Regulatory Affairs
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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, and each participant on its stakeholder committees. The NYISO will send an electronic copy of this filing to the New York State Public Service Commission and the New Jersey Board of Public Utilities. The NYISO will also post a complete copy of this filing on its website at www.nyiso.com.

VIII. Conclusion

The NYISO respectfully requests that the Commission: (1) waive its regulations to allow the NYISO to make this filing more than 120 days prior to the date on which the proposed tariff revisions are to become operational; and (2) issue an order on or before June 17, 2025 accepting the tariff revisions proposed in this filing without modification, with a flexible effective date as further described in Section IV.

Respectfully submitted,

/s/ James H. Sweeney
James H. Sweeney, Senior Attorney
New York Independent System Operator, Inc.

cc: Janel Burdick
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