

166 FERC ¶ 61,146
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Cheryl A. LaFleur, Richard Glick,
and Bernard L. McNamee.

ISO New England Inc.
New England Power Pool Participants Committee

Docket No. ER19-84-000

ORDER ACCEPTING TARIFF REVISIONS

(Issued February 25, 2019)

1. On October 10, 2018, pursuant to section 205 of the Federal Power Act (FPA),¹ ISO New England Inc. (ISO-NE), joined by the New England Power Pool (NEPOOL) Participants Committee, filed revisions to the ISO-NE Transmission, Markets and Services Tariff (Tariff) to codify a new design that enables electric storage resources to more fully participate in ISO-NE's markets (Storage Revisions). As discussed below, we accept the proposed revisions, to be effective April 1, 2019, as requested by ISO-NE.

I. Background

2. ISO-NE explains that, while it has limited experience with electric battery storage participation in its wholesale markets, it has extensive experience with certain other electric storage resources – namely, pumped-storage hydroelectric units. ISO-NE states that nearly 2,000 MWs of pumped-storage hydroelectric units have been operating in the New England region since the 1970s.² ISO-NE explains that these resources have participated in its wholesale electricity markets since their inception, and continue to participate in the energy, reserves, frequency regulation (regulation), and capacity markets.³ ISO-NE further explains that each pumped-storage hydroelectric unit is modeled and participates in ISO-NE's markets as two distinct asset types: a dispatchable

¹ 16 U.S.C. § 824d (2012).

² Transmittal at 5.

³ *Id.*

Generator Asset⁴ that submits offers to supply energy and regulation, and a Dispatchable Asset Related Demand (DARD) asset that submits bids to consume energy.⁵

3. ISO-NE explains that a pumped-storage unit typically consumes power to pump when prices are low by the unit's DARD submitting a demand bid priced such that the unit will be committed and dispatched by ISO-NE.⁶ When the DARD's demand bid becomes uneconomic, ISO-NE will de-commit the DARD and send it an electronic dispatch signal to shut down. If the Generator Asset's supply offer then becomes economic, it is committed and dispatched to provide energy. ISO-NE explains that the decisions to de-commit the DARD (when the demand bid becomes uneconomic) and commit the Generator Asset are not made in the same run of the commitment software, but rather in sequential runs to allow time for the pump/turbines to come to a complete stop and reverse direction.⁷

4. ISO-NE explains that there are currently 19 MWs of battery storage facilities participating in its markets, over 800 MWs of battery storage proposals in its interconnection queue, and an additional 170 MWs of battery storage proposals in the interconnection queue that are co-located with wind and solar energy projects.⁸ ISO-NE states that, unlike pumped-storage hydroelectric units, the battery storage resources in the ISO-NE interconnection queue can transition nearly instantaneously between charging and discharging and have the ability to operate continuously between their maximum consumption level and their maximum output level.

5. To account for the physical and operational differences between these battery storage resources and the existing pumped-storage hydroelectric resources, ISO-NE states

⁴ Unless indicated otherwise, all capitalized terms shall have the same meaning given them in the Tariff.

⁵ Transmittal at 5.

⁶ *Id.*

⁷ *Id.* at 5-6.

⁸ *Id.* at 4 n.13.

that the Storage Revisions include new Continuous Storage Facility⁹ rules,¹⁰ which it distinguishes from rules applicable to a Binary Storage Facility, as discussed further below. ISO-NE explains that it set a series of design goals in crafting a means for Continuous Storage Facilities to participate in the energy, reserves, and regulation markets, including that such facilities should: (1) be dispatched to generate and consume based on economics; (2) not be dispatched to generate when depleted or dispatched to consume when full; (3) be able to set real-time Locational Marginal Prices when generating or consuming; (4) be able to provide regulation while maintaining their state of charge, allowing simultaneous regulation market and energy market participation; (5) be designated for reserves; (6) be able to save energy for a future interval; (7) receive Net Commitment Period Compensation (NCPC), or uplift, credits if dispatched out-of-rate; and (8) be able to be directed by the ISO-NE control room to increase storage, or save available energy, for a future hour.¹¹

6. ISO-NE explains that it had already completed internal design work on the Storage Revisions by the time the Commission issued Order No. 841¹² in February 2018. ISO-NE explains that it opted to submit the instant changes under FPA section 205 instead of as part of its Order No. 841 compliance filing so that it could implement these changes eight months before the effective date contemplated in Order No. 841.¹³ ISO-NE states that the proposed Storage Revisions contained in the instant filing “bring the region a long way towards compliance with Order No. 841,” and that its subsequent Order

⁹ The Tariff defines Continuous Storage Facility as “a type of Electric Storage Facility, as described in Section III.1.10.6 of Market Rule 1.” Tariff section III.1.10.6(c) outlines requirements for a storage facility to participate as a Continuous Storage Facility, including the requirement that “[a Continuous Storage Facility shall] be capable of transitioning between the facility’s maximum output and maximum consumption (and vice versa) in ten minutes or less.” Tariff, § III.1.10.6(c)(iii).

¹⁰ Transmittal at 6-7.

¹¹ *Id.* at 6.

¹² *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 (2018) (Order No. 841).

¹³ Transmittal at 5.

No. 841 compliance filing will demonstrate that the two sets of changes together fully comply with the requirements of Order No. 841.¹⁴

II. ISO-NE's Filing

7. ISO-NE states that the Storage Revisions proposed in the instant filing enable electric storage technologies to more fully participate in ISO-NE's markets. According to ISO-NE, the Storage Revisions enable electric storage technologies to be dispatched in ISO-NE's real-time energy market in a manner that more accurately recognizes their technological and operational capabilities—principally their ability to transition rapidly between a charging state and discharging state. ISO-NE explains that the Storage Revisions also provide these resources a means to simultaneously participate in its energy, reserves, and regulation markets.¹⁵

8. ISO-NE provides an overview of the Continuous Storage Facility rules and its approach to various aspects of the market design.¹⁶ ISO-NE explains that the Storage Revisions include: (1) Tariff-wide revisions related to the storage design changes;¹⁷ (2) a new section devoted to electric storage resources; (3) changes that help clarify self-scheduling and self-dispatch Tariff provisions; (4) clarifications to energy market offer provisions; (5) clarifications to the Tariff's DARD-related provisions; (6) revisions related to operating reserves; (7) regulation market revisions; (8) settlement-related revisions; and (9) clean-up changes.¹⁸

¹⁴ *Id.* at 4-5 n.15.

¹⁵ *Id.* at 1.

¹⁶ *Id.* at 7.

¹⁷ The Storage Revisions generally update the Tariff to use the asset type (Generator Asset, DARD, etc.) where the intention is to refer to the digital market representation rather than the physical equipment. ISO-NE also proposes to update terminology that is too narrow and to replace existing terms with more technology-neutral nomenclature to recognize that a single piece of physical equipment is modeled as more than one asset type. *Id.* at 13.

¹⁸ *Id.* at 12. The “clean-up changes” largely eliminate provisions made redundant or unnecessary by revisions to other sections of the Tariff. *Id.* at 33-35. Substantive clean-up additions include clarifications to the definitions of Load Asset, Asset Related Demand, Fast Start Generator, and Seasonal Claimed Capability. *Id.* at 34-35 (citing Tariff, § I.2.2).

9. ISO-NE highlights a new section III.1.10.6 of the Tariff, which it describes as the “heart” of the Storage Revisions.¹⁹ This section defines an Electric Storage Facility²⁰ and provides that such a facility must be registered as either a Binary Storage Facility or a Continuous Storage Facility, details of which are provided in subsections (b) and (c) of the revised Tariff, respectively.²¹ The Storage Revisions specify that a Binary Storage Facility must be a pumped-storage hydroelectric unit that offers both its Generator Asset and DARD in the energy market as Rapid Response Pricing Assets.²² In contrast, a Continuous Storage Facility must meet several different and additional requirements outlined in the new Tariff provisions; in particular, a facility must be registered as both a dispatchable Generator Asset and a DARD with each registration representing the same equipment, and must be registered as, and may provide regulation as an Alternative Technology Regulation Resource (ATRR)²³ that represents the same equipment as the

¹⁹ *Id.* at 14.

²⁰ *Id.* n.44. Electric Storage Facility is a newly introduced term defined in section I.2.2. as “a storage facility that participates in the New England Markets as described in Section III.1.10.6 of Market Rule 1.”

²¹ *Id.* at 14-15.

²² *Id.* at 15. The Storage Revisions include an updated definition of Rapid Response Pricing Asset:

(i) a Fast Start Generator; (ii) a Flexible DNE Dispatchable Generator; or (iii) a Binary Storage DARD with Offer Data specifying a Minimum Run Time and a Minimum Down Time not exceeding one hour each. A Rapid Response Pricing Asset shall also include a Fast Start Demand Response Resource for which the Market Participant’s Offer Data meets the following criteria: (i) Minimum Reduction Time does not exceed one hour; and (ii) Demand Response Resource Notification Time plus Demand Response Resource Start-Up Time does not exceed 30 minutes.

Tariff, § I.2.2 (Definitions).

²³ The Storage Revisions include an updated definition of ATRR: “one or more facilities capable of providing Regulation that have been registered in accordance with the Asset Registration Process. An Alternative Technology Regulation Resource is eligible to participate in the Regulation Market.” Tariff, § I.2.2 (Definitions).

associated Generator Asset and DARD.²⁴ Further, the new section provides participation options such that electric storage resources that do not participate as Electric Storage Facilities may participate in the ISO-NE markets in any manner for which they qualify.²⁵

10. ISO-NE requests that the Commission issue an order on the Storage Revisions by December 10, 2018, with an effective date of April 1, 2019.²⁶ ISO-NE states that, because the requested effective date of April 1, 2019 is more than 120 days after the date of its filing, ISO-NE requests waiver of the notice requirements under section 35.3(a)(1) of the Commission's Regulations²⁷ so that an order can be issued by December 10, 2018. ISO-NE states that good cause exists to grant the waiver because implementation of the Storage Revisions requires changes to software, internal procedures, and control room operator training, all of which require a significant time investment.²⁸

²⁴ Transmittal at 15. Tariff section III.1.10.6(c) specifies that a Continuous Storage Facility:

(1) must be registered as, and may provide regulation as, an ATRR that represents the same equipment as the associated Generator Asset and DARD; (2) must be capable of transitioning between its maximum output and maximum consumption in 10 minutes or less; (3) is precluded from utilizing storage capability that is shared with another Generator Asset, DARD or ATRR; (4) must specify in offer and bid data a zero MW value for Economic Minimum Limit, Emergency Minimum Limit, and Minimum Consumption Limit (except when testing or auditing); a zero time value for Notification Time, Start-Up Time, Minimum Run Time, and Minimum Down Time; and a zero cost value for Start-Up Fee and No-Load Fee; and (5) must be Self-Scheduled in the Day-Ahead Energy Market and Real-Time Energy Market, and operate in an on-line state, unless the facility is declared unavailable by the Market Participant.

²⁵ *Id.* at 15-16.

²⁶ *Id.* at 2.

²⁷ 18 C.F.R. § 35.3(a)(1) (2018).

²⁸ Transmittal at 2.

A. Commitment

11. ISO-NE states that, under the Storage Revisions, facilities capable of transitioning between consumption and generation in 10 minutes or less entirely avoid the commitment process when participating as a Continuous Storage Facility.²⁹ ISO-NE explains that this will be implemented by requiring the Generator Asset and the DARD of a Continuous Storage Facility to be “self-scheduled” unless the facility is out of service.³⁰ ISO-NE asserts that under the Storage Revisions, the Generator Asset and the DARD of a Continuous Storage Facility will be by default committed to an on-line state at zero MW (unless the facility is out of service), making it available at all times.³¹ As a result, ISO-NE can dispatch a Continuous Storage Facility from a discharging to consuming state within a single dispatch interval.³² ISO-NE also notes that offer data related to time, including Notification Time, Start-Up Time, Minimum Run Time, and Minimum Down Time, as well as values related to commitment costs, including Start-Up Fees and No-Load Fees, are also submitted as zero MWs and zero dollar values, respectively.³³ In order for the software to function properly, ISO-NE notes that the Minimum Consumption Limit (lowest available consumption level) of the DARD and Economic Minimum Limit (lowest sustainable output level) of the Generator Asset must each equal zero MW.³⁴

B. Offering and Clearing

12. ISO-NE explains that the Storage Revisions do not substantively change the rules regarding energy market offers or clearing, but like all dispatchable Generator Assets and DARDs, Continuous Storage Facilities can offer in the Day-Ahead Energy Market and can set the price in the Day-Ahead Energy Market and Real-Time Energy Market.³⁵ ISO-NE states that Continuous Storage Facilities’ Generator Assets and DARDs submit the same offer parameters and physical limits as other dispatchable Generator Assets and

²⁹ *Id.* at 7.

³⁰ *Id.* n.18; Tariff, §§ III.1.10.6(c), 10.9(e).

³¹ Transmittal at 7.

³² *Id.*

³³ *Id.* at 8.

³⁴ *Id.* at 7-8.

³⁵ *Id.* at 8-9.

DARDs. Although the Storage Revisions make no substantive change to these submissions, ISO-NE highlights Maximum Daily Energy Limit and Maximum Daily Consumption Limit as day-ahead offer parameters that allow an electric storage resource to manage the risk of clearing more MWhs day-ahead than its storage capacity would allow it to deliver.³⁶ ISO-NE states that the revised energy market offer provisions are located in Tariff Section III.1.10.1A.³⁷

C. Regulation

13. ISO-NE states that the Storage Revisions provide a platform to allow batteries to provide regulation while simultaneously consuming or supplying energy and providing reserves; ISO-NE provides this platform by modeling Continuous Storage Facilities as ATRRs.³⁸ ISO-NE notes that in 2016, the Commission accepted Tariff revisions to allow ATRRs to be simultaneously modeled as dispatchable Generator Assets and DARDs, effective December 1, 2018.³⁹ ISO-NE asserts that the Storage Revisions are designed to assume that the ATRR will have a net energy consumption of zero, on average, such that the Continuous Storage Facility's net available energy and storage will not be changed due to providing regulation service.⁴⁰ ISO-NE accomplishes this outcome by dispatching ATRRs to provide regulation via an "energy neutral" regulation signal with a range that

³⁶ *Id.* at 9.

³⁷ *Id.* at 18.

³⁸ *Id.* at 9, 24-29. The Storage Revisions include a series of Tariff revisions, clarifications, and updates, primarily to section III.14 (Regulation Market), to accommodate Electric Storage Facilities' ability to participate in the regulation market. These revisions include an update that disallows ATRRs that are part of Continuous Storage Facilities from being composed of aggregations of smaller facilities. Tariff, § III.14.b(c).

³⁹ Transmittal at 9 n.29 (citing *ISO New England Inc.*, 157 FERC ¶ 61,189 (2016)).

⁴⁰ *Id.* at 9-10, 20. ISO-NE states that the Storage Revisions include new language in Section III.1.10.9(g) and (h) governing how ISO-NE adjusts energy market operating limits when a resource is providing regulation. ISO-NE explains that the Storage Revisions also include a number of minor changes to Section III.14.2 describing the eligibility requirements for regulation market participation and making related changes to Section III.14.3. *Id.* at 25.

is symmetrical around zero MW.⁴¹ ISO-NE also notes that in any given hour, a Continuous Storage Facility can “partition” its energy and regulation capability as it sees fit.⁴² If it offers to provide regulation in an hour but does not clear, the entirety of its range will be available for energy market dispatch.⁴³

14. Additional revisions to the Tariff’s regulation construct propose to: (1) delineate the types of regulation market signals;⁴⁴ (2) implement performance score metrics for Continuous Storage Facility ATRRs;⁴⁵ and (3) clarify the calculation processes for regulation clearing prices, regulation provider compensation, and regulation charges.⁴⁶

D. Telemetry

15. As part of the Storage Revisions, Continuous Storage Facilities will be required to telemeter to ISO-NE their available energy and storage, similar to telemetry provided by pumped-storage hydro resources.⁴⁷ ISO-NE notes that available energy and storage may be adjusted by the participant to reflect physical limits and avoid ISO-NE operating the battery at extremes.⁴⁸ ISO-NE explains that the defined terms Economic Maximum Limit and Maximum Consumption Limit are revised to reflect the requirement to maintain up-to-date operating limits and includes, where applicable, a requirement to submit to ISO-NE the telemetry necessary to allow ISO-NE to maintain the Continuous Storage Facilities’ limits.⁴⁹

⁴¹ *Id.* at 10, 27 (citing Tariff, § III.14.3(a)(ii) and (iii)).

⁴² *Id.* at 10.

⁴³ *Id.*

⁴⁴ *Id.* at 28 (citing Tariff, § III.14.6).

⁴⁵ *Id.* (citing Tariff, § III.14.7).

⁴⁶ *Id.* at 28-29 (citing Tariff, § III.14.8(a), (b), and (d)).

⁴⁷ *Id.* at 10.

⁴⁸ *Id.*

⁴⁹ *Id.* at 20; *see* Tariff, § I.2.2 (Definitions).

E. Reserves, Sustainability, and Operating Limit Adjustment

16. ISO-NE explains that it operates a co-optimized real-time energy and reserve market; resources that are reserve-capable are evaluated in real-time to determine the amount of reserves and energy for which they should be dispatched.⁵⁰ ISO-NE notes that these rules apply to Continuous Storage Facilities in the same way they apply to other Generator Assets and DARDs, with two exceptions. First, a Continuous Storage Facility's Generator Asset can provide Ten-Minute Spinning Reserves in an amount equal to the number of MWs between its current MW output and its maximum MW output.⁵¹ Second, Continuous Storage Facilities cannot provide off-line reserves since they are always on line.⁵²

17. ISO-NE proposes Tariff changes describing the calculation of Real-Time Reserve Designation to recognize that, because battery installations are frequently modular, a battery installation registered as a single Generator Asset may consist of multiple inverters, and that ISO-NE will be able to determine the synchronized capability of the Generator Asset (and Electric Storage Facilities) to provide Ten-Minute Spinning Reserves.⁵³ ISO-NE also proposes ministerial changes to clarify the use of Ten-Minute and Thirty-Minute reserve audits values pertaining to Generator Assets and Demand Response Resources, as applicable, in the calculation of the Real-Time Reserve Designation.⁵⁴ In addition, ISO-NE proposes to modify the Tariff language regarding non-storage DARD reserve to be consistent with how reserves are calculated for dispatched Demand Response Resources and on-line Generator Assets.⁵⁵ ISO-NE also proposes minor clarifying language regarding storage DARDs providing Ten-Minute Spinning Reserves⁵⁶ and corrections to existing provisions for off-line Generator Assets

⁵⁰ Transmittal at 11.

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Id.* at 22 (citing Tariff, § III.1.7.19.2.1.1(a) and (b)). ISO-NE also proposes relevant changes to the definitions of Ten-Minute Spinning Reserve, Ten-Minute Non-Spinning Reserve, and Thirty-Minute Operating Reserve to simply refer to the Real-Time Reserve Designation section. *Id.* (citing Tariff, § I.2.2 (Definitions)).

⁵⁴ *Id.* (citing Tariff, § III.1.7.19.2).

⁵⁵ *Id.* at 22-23 (citing Tariff, § III.1.7.19.2.2.2).

⁵⁶ *Id.* at 23 (citing Tariff, § III.1.7.19.2.2.1(a)).

providing Ten-Minute Non-Spinning Reserve and Thirty-Minute Operating Reserve.⁵⁷ ISO-NE proposes to revise the Tariff to replace the current undefined term “controllable behind-the-meter generation” with a new defined term, Controllable Behind-the-Meter Generation, to allow the inclusion of more detail and to exclude separately metered and reported generators and emergency generators.⁵⁸ ISO-NE also proposes clarifying language pertaining to the Forward Reserve Market.⁵⁹ Further, ISO-NE proposes Tariff revisions to clarify failure to activate penalties, which are assessed when a resource assigned to provide Forward Reserve fails to follow ISO-NE dispatch instructions during specific events.⁶⁰

18. ISO-NE explains that it is bound by standards set by the Northeast Power Coordinating Council, including the requirement that reserves be sustainable for at least one hour from the time of activation.⁶¹ ISO-NE explains that this standard can become a constraint for limited energy resources including Continuous Storage Facilities, whereas it is typically not a concern for traditional generators that can run for long periods under normal conditions.⁶² In order to comply with this Northeast Power Coordinating Council standard, ISO-NE explains that it will automatically reduce the Economic Maximum Limit of a Continuous Storage Facility’s Generator Asset when the facility has less than one hour of available energy remaining.⁶³ ISO-NE further explains that, in other words, if a Continuous Storage Facility generating at its Economic Maximum Limit were to run

⁵⁷ *Id.* (citing Tariff, § III.1.7.19.2.1.2(b) and (c)).

⁵⁸ *Id.* (citing Tariff, §§ III.1.7.19.2.2.2 and III.1.7.19.2.3.1).

⁵⁹ *Id.* at 24 (citing Tariff, §§ III.9.5.1(b), III.9.5.2(a)(iii), III.9.6.4(a), III.9.6.5(c)).

⁶⁰ *Id.* (citing Tariff, § III.9.7.2(a)).

⁶¹ *Id.* at 11 n.32 (citing Northeast Power Coordinating Council Directory Number 5, section 5.13 (“[s]ynchronized reserve, ten-minute reserve, and thirty-minute reserve . . . shall be sustainable for at least one hour from the time of activation.”)).

⁶² *Id.* at 11.

⁶³ *Id.* In its Answer, ISO-NE explains that all dispatchable resources are required to update their operating limits in real-time to reflect their current capabilities including their maximum output limit, and that all operating limit redeclarations have required a phone call to the ISO-NE control room. ISO-NE explains that the Storage Revisions automate the existing redeclaration process so that Continuous Storage Facilities are not required to call the control room each time their available energy approaches one hour at their offered maximum output. ISO-NE Answer at 7 & n. 32.

out of energy in under one hour, ISO-NE's software will automatically adjust the unit's Economic Maximum Limit to an output level that can be sustained for one hour.⁶⁴ ISO-NE states that it is not necessary to do this on the consumption side, because when a load is dispatched down, it can operate at the lower consumption level indefinitely.⁶⁵ However, ISO-NE states, the operating limits of a Continuous Storage Facility's DARD will also be adjusted if the facility's available storage is sufficiently low (i.e., if the battery is sufficiently full) that the DARD could not sustain a dispatch to consume at its offered Maximum Consumption Limit for 15 minutes, the length of time a resource must be able to sustain a given Desired Dispatch Point.⁶⁶

F. Self-Dispatch

19. ISO-NE asserts that the Storage Revisions do not substantively change its existing self-dispatch Tariff provisions.⁶⁷ ISO-NE states that Continuous Storage Facilities will be able to request a self-dispatch 30 minutes prior to the hour via telephone call to the control room, and, assuming there is no reliability concern, the resource will be dispatched accordingly.⁶⁸ ISO-NE states that it proposes to revise the definition of Self-Schedule to clarify that self-schedule will more precisely mean to "self-commit."⁶⁹ ISO-NE highlights additional clarifying changes that remove three subsections because they are unnecessary and misleading.⁷⁰ Further, ISO-NE proposes language to clarify "self-dispatching," and language to explain more precisely how the supply offers and demand bids of resources have been self-dispatched.⁷¹

⁶⁴ Transmittal at 11. ISO-NE states that it will calculate whether a Continuous Storage Facility would run out of energy in under an hour based on the one-hour available energy value it telemeters to ISO-NE.

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.* at 12.

⁶⁸ *Id.*

⁶⁹ *Id.* at 16 (citing Tariff, §§ I.2.2, III.1.10.1A(c)(iv), (c)(v), (e)).

⁷⁰ *Id.* at 16-17 (citing Tariff, § III.1.10.3).

⁷¹ *Id.* at 17 (citing Tariff, §§ III.1.10.9(f), III.F.1(b)(ii)).

G. Settlement

20. ISO-NE states that the Storage Revisions extend the existing cost allocation and NCPC logic to Continuous Storage Facilities and no changes to ISO-NE's overarching settlement design are necessary to accommodate Electric Storage Facilities.⁷² However, the Storage Revisions do include minor Tariff changes to Section III.3 (Accounting and Billing) and Appendix F (Net Commitment Period Compensation Accounting). Specifically, ISO-NE proposes Tariff revisions specifying that, for the purposes of comparing the telemetered data of a Continuous Storage Facility with its hourly revenue quality data, the values that will be compared are the net of values submitted for the facility's Generator Asset and the facility's DARD.⁷³ ISO-NE states that in some cases, the existing NCPC logic applies differently to Continuous Storage Facilities (which stay committed unless they are unavailable) and Binary Storage Facilities (which are committed and de-committed in real-time, as are all fast-start resources). Accordingly, to apply the existing NCPC logic to Continuous Storage Facilities and Binary Storage Facilities, ISO-NE proposes conforming and clarifying language to several Tariff sections pertaining to NCPC accounting.⁷⁴

III. Notice of Filing and Responsive Pleadings

21. Notice of ISO-NE's filing was published in the *Federal Register*, 83 Fed. Reg. 52,830 (2018), with interventions and comments due on or before October 31, 2018.

22. The following entities filed timely motions to intervene: Calpine Corporation; Dominion Energy Services, Inc.; Eversource Energy Service Company; FirstLight Power Resources, Inc.; National Grid; NextEra Energy Resources, LLC; NRG Power Marketing LLC; and PSEG Power LLC, PSEG Energy Resources & Trade LLC, and PSEG Power Connecticut LLC, jointly.

23. The Energy Storage Association (ESA) filed a timely motion to intervene and comments.

24. On November 15, 2018, NEPOOL filed an answer to the comments filed by ESA (NEPOOL Answer). ISO-NE filed an answer in response to ESA's comments on

⁷² *Id.* at 12, 29.

⁷³ *Id.* at 30 (citing Tariff, § III.3.2.1.1(b)(i)). ISO-NE also proposes clarifying edits to Tariff, § III.3.2.1.1(c)(ii).

⁷⁴ *Id.* at 30-32 (citing Tariff, §§ III.F.2, III.F.3).

November 15, 2018, corrected by an errata filed on November 16, 2018 (ISO-NE Answer).

IV. ESA's Comments

25. ESA explains that it generally supports the timeline and substance of the Storage Revisions, with one exception. ESA agrees with ISO-NE that the Storage Revisions will greatly facilitate market participation by newer storage technologies by providing battery storage resources with the ability to register in the ISO-NE markets as a Continuous Storage Facility and to be dispatched to any MW level within the resource's capabilities—from their maximum consumption level to their maximum output level—throughout the operating day. ESA states that, absent these changes, battery storage resources would be restricted to acting either as a Generator Asset or a DARD within each hour.⁷⁵ However, ESA contends that ISO-NE's proposal to automatically "redeclare" an energy storage facility's MW output to ensure energy for reserves is unjust and unreasonable and fails to comply with Order No. 841.⁷⁶

26. ESA asserts that, as proposed in the instant filing, ISO-NE would determine that electric storage resources must provide reserves at all times, even when reserves are in abundance, to the exclusion of the electric storage resource's ability to sell its stored energy. Further, ESA asserts that ISO-NE's proposal would automatically de-rate the MW output of electric storage resources to ensure enough energy for reserves,⁷⁷ in accordance with the Northeast Power Coordinating Council requirement. ESA argues that the automatic redeclaration process, stemming from the automatic assignment as reserves, is unjust and unreasonable for limited energy resources such as Continuous Storage Facilities.⁷⁸ ESA asserts that "the operational impact of the proposed tariff implementation" is unjust and unreasonable because it results in certain electric storage resources being unable to provide all of the energy service they are technically capable of providing and could distort the market.⁷⁹ ESA explains that ISO-NE designates as reserve providers those generators that have dispatchable "headroom" above their current dispatch point and maximum output level, and also offline generators with the capability

⁷⁵ ESA Comments at 1-2.

⁷⁶ *Id.* at 5-10.

⁷⁷ ESA refers to this as "automatic redeclaration." *Id.* at 6.

⁷⁸ *Id.* ESA states that it does not challenge the Northeast Power Coordinating Council sixty-minute duration requirement for reserves.

⁷⁹ *Id.* at 2, 6.

to start up within 30 minutes.⁸⁰ While the Northeast Power Coordinating Council requirement to sustain operating reserves for one hour is not a limiting constraint for most generators, ESA asserts that this constraint is binding for electric storage resources such as Continuous Storage Facilities when the resource has less than one hour of energy.⁸¹

27. ESA further contends that ISO-NE's proposal violates Order No. 841 by failing to account for the physical and operational characteristics of electric storage resources and restricting energy storage facilities from gaining full access to the energy market.⁸²

28. ESA proposes that, instead of ISO-NE's current proposal for automatic redeclaration of storage MWs, ISO-NE could (1) meet the relevant Northeast Power Coordinating Council requirement by prioritizing energy over reserves and thus de-rate the reserves assignment instead of the energy dispatch for energy storage facilities; (2) make energy storage facilities indifferent to foregone energy sales by implementing an economic co-optimization of the assignment of energy storage facilities between energy and reserves; or (3) permit Continuous Storage Facility resources to opt into or out of providing reserves.⁸³ ESA contends that ISO-NE's self-dispatch proposal, wherein a market participant can call ISO-NE's control room to request not to provide reserves, is not a practical solution because it requires a phone call to the control room, requires approval, is time consuming, and may need to be repeated every hour or multiple hours.⁸⁴

29. ESA notes that, while compliance with Order No. 841 may be outside the scope of this proceeding, it has submitted these comments in the instant filing because the automatic redeclaration provision is proposed here and ESA believes it will not be provided an opportunity to protest the implementation of this provision in the Order

⁸⁰ *Id.* at 5.

⁸¹ *Id.* at 6. The graphs on page 7 of ESA's comments illustrate the purported effect of automatic redeclaration on energy dispatch for an energy storage facility. ESA contends that the automatic redeclaration practice would prevent 35 percent of a battery's energy from being sold into the ISO-NE market. *Id.* at 6-7.

⁸² *Id.* at 8-9.

⁸³ *Id.* at 9. ESA notes that the New York Independent System Operator is planning to de-rate reserves assignment instead of energy as part of its Order No. 841 compliance. *Id.* at n.10.

⁸⁴ *Id.* at 9-10.

No. 841 proceeding.⁸⁵ ESA suggests that ISO-NE should notify the Commission that it will not implement the automatic redeclaration provision as described.⁸⁶ In the alternative, ESA suggests that the Commission remedy or remove those provisions in approving the instant filing or direct ISO-NE to include in its Order No. 841 compliance filing a description of how it will implement an economic co-optimization mechanism to ensure that Continuous Storage Facilities that forego selling energy to provide reserves are economically indifferent to that outcome.⁸⁷

V. Answers

30. ISO-NE states that it will not unilaterally and voluntarily alter the implementation of the redeclaration process that was described during the stakeholder process and presented in the Storage Revisions, as ESA requests.⁸⁸ ISO-NE urges the Commission not to direct ISO-NE to alter its implementation of the redeclaration process because (1) ESA has not, nor can it, demonstrate that the practice is unjust and unreasonable, and (2) ESA's argument that the practice does not comply with Order No. 841 is not relevant to this section 205 proceeding.⁸⁹ ISO-NE further states that, despite ESA's assertion to the contrary, including the redeclaration process in the Storage Revisions does not alleviate ISO-NE of its burden to demonstrate Order No. 841 compliance in that proceeding.⁹⁰

31. ISO-NE argues that it would be procedurally inappropriate for ISO-NE to change a component of the Storage Revisions already filed with the Commission, and that the Commission should not grant ESA's requested relief at this time.⁹¹ ISO-NE asserts that ESA fails to demonstrate that the Storage Revisions are unjust and unreasonable, noting that changes proposed "need not be the only reasonable methodology, or even the most accurate" and that the Commission's review does not "extend to determining whether a

⁸⁵ *Id.* at 3.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ ISO-NE Answer at 3.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.* at 5.

proposed rate schedule is more or less reasonable than alternative rate designs.”⁹² Further, ISO-NE contends that the Storage Revisions do not become unjust and unreasonable simply because they may not facilitate a participant’s efforts to maximize its revenues, as ESA suggests.⁹³ According to ISO-NE, the redeclaration process, to which ESA objects and hopes to overturn, is simply an automated version of a longstanding ISO-NE process. ISO-NE states that it could not imagine a scenario in which an intervenor in an FPA section 205 proceeding could overturn an existing ISO-NE process.⁹⁴

32. Further, ISO-NE states that ESA’s assertion that the redeclaration process does not comply with Order No. 841 is not relevant to this proceeding.⁹⁵ ISO-NE explains that it will make a separate compliance filing in response to Order No. 841. ISO-NE notes that the Storage Revisions are an incremental step to improve market participation by emerging storage technologies in ISO-NE’s market at a faster timeframe than is set forth in Order No. 841.⁹⁶ ISO-NE claims that the Storage Revisions must be reviewed according to the FPA section 205 standards pursuant to which they were filed.⁹⁷ To do otherwise, ISO-NE asserts, would not only be procedurally incorrect but also deny the benefit of these proposed market improvements.⁹⁸

⁹² *Id.* at 6 (citing *Oxy USA, Inc. v. FERC*, 64 F.3d 679, 692 (D.C. Cir. 1995); *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984)).

⁹³ *Id.* at 6. ISO-NE states that ESA exaggerates the extent to which revenues would be impacted by redeclaration. ISO-NE asserts that it would not issue a dispatch instruction unless it can be followed for at least 15 minutes, and therefore the figures that ESA provides are not entirely accurate. *Id.* n.29.

⁹⁴ *Id.* at 7-8.

⁹⁵ *Id.* at 8.

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

33. Lastly, ISO-NE indicates that, notwithstanding ESA's assertions to the contrary,⁹⁹ ESA will have the opportunity to pursue its requested relief in upcoming proceedings.¹⁰⁰ ISO-NE states that language describing the redeclaration of operating limits resides in the ISO Manuals, and the ISO Manual review process will provide ESA and other stakeholders with an additional venue in which any proposed practices can be considered.¹⁰¹

34. NEPOOL urges the Commission to accept the Storage Revisions as filed as improvements to the status quo, and not permit ESA's request for further changes to delay implementation of the proposed enhancements.¹⁰² NEPOOL states that the Storage Revisions allow storage technologies to simultaneously participate in the energy, reserves, and regulation markets in a manner that is comparable among resources.¹⁰³ NEPOOL urges the Commission to permit full stakeholder consideration of any alternative approaches.¹⁰⁴ While NEPOOL does not take any substantive position on the changes proposed by ESA, NEPOOL asserts that it opposes ESA's request from a process perspective.¹⁰⁵ NEPOOL further asserts that the only issue before the Commission is whether the Storage Revisions are just and reasonable, not whether the changes respond fully to Order No. 841 or otherwise fail to make other changes that ESA seeks.¹⁰⁶

⁹⁹ *Id.* at 9 (citing ESA Comments at 3 (“[b]ecause ISO-NE has included the automatic redeclaration provision in this filing and not in its Order No. 841 compliance filing, ESA will not be provided an opportunity to protest the implementation of this provision in the Order No. 841 proceeding.”)).

¹⁰⁰ *Id.* at 9.

¹⁰¹ *Id.*

¹⁰² NEPOOL Answer at 2.

¹⁰³ *Id.* at 3.

¹⁰⁴ *Id.* at 4.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 5.

VI. Discussion

A. Procedural Matters

35. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

36. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2018), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We accept ISO-NE's and NEPOOL's answers because they have provided information that has assisted us in our decision-making process.

B. Substantive Matters

37. We accept ISO-NE's Tariff revisions as just and reasonable, effective April 1, 2019,¹⁰⁷ as requested by ISO-NE. We agree with ISO-NE that the revisions to its Tariff enhance the ability of electric storage resources to participate in ISO-NE's markets. These revisions reduce barriers to entry for electric storage resources by revising ISO-NE's market rules to enable electric storage resources to participate in ISO-NE's wholesale electric markets and provide services they are capable of providing, including capacity, energy, and ancillary services. To this end, we find that the revisions to ISO-NE's Tariff are just and reasonable because they enhance competition and, in turn, help to ensure that ISO-NE's markets produce just and reasonable rates.

38. With respect to ESA's concerns regarding the assignment of reserves to electric storage resources, we note that ISO-NE did not propose any Tariff changes related to what ESA describes as the automatic redeclaration process.¹⁰⁸ The Tariff already requires resources to update their operating limits in real time.¹⁰⁹ While described in ISO-NE's transmittal letter, this practice for electric storage resources is not reflected in or implemented via the proposed Tariff revisions. Thus, arguments concerning the merits of such an approach are beyond the scope of this proceeding. To the extent that the practices described in ISO-NE's transmittal letter relate more generally to compliance with Order No. 841, we decline to address their merits in this proceeding.

¹⁰⁷ We grant ISO-NE's request for waiver of the Commission's prior notice filing requirement, 18 C.F.R. § 35.3(a)(1) (2018).

¹⁰⁸ See ISO-NE Answer at 9 (stating that the language describing the redeclaration of operating limits resides in the ISO-NE Manuals).

¹⁰⁹ Tariff, § 1.2.2 (Definitions, Economic Maximum Limit).

39. We note that, while we find the proposed revisions to ISO-NE's Tariff are just and reasonable and not unduly discriminatory or preferential, ISO-NE has submitted a separate filing in Docket No. ER19-470-000 to comply with Order No. 841. ESA has filed a motion to intervene and submitted comments addressing automatic redeclaration in that proceeding, which will be addressed there. We will determine whether ISO-NE's Tariff complies with the requirements of Order No. 841 in Docket No. ER19-470-000 and will address any concerns regarding ISO-NE's compliance in that proceeding.

The Commission orders:

ISO-NE's proposed Storage Revisions are hereby accepted, as discussed in the body of this order, to be effective April 1, 2019, as requested.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.