



Short-Term Reliability Process Report: 2023 Near-Term Reliability Need

Solution Selection

A Report by the
New York Independent System Operator

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Background

In 2019, the NYISO established a new Short-Term Reliability Process (“STRP”) with its requirements prescribed in Attachments Y and FF of the NYISO’s Open Access Transmission Tariff (“OATT”)¹. The STRP evaluates the first five years of the planning horizon, with a focus on needs arising in the first three years of the planning horizon. The Reliability Planning Process focuses on solutions to longer term needs (years four through ten) through the Reliability Needs Assessment (“RNA”) and the Comprehensive Reliability Plan (“CRP”).

The first step in the STRP is the Short-Term Assessment of Reliability (“STAR”). STARS are performed quarterly to proactively address reliability needs that may arise within five years (“Short-Term Reliability Needs”)² due to various changes to the grid such as generator deactivations, revised transmission plans, and updated load forecasts. Transmission Owners also assess the impact of generator deactivations on their local systems. A Short-Term Reliability Need that is observed within (a) three years of the conclusion of the 365 day notice period for a Generator Deactivation Reliability Need, or (b) within three years after the posting of the relevant STAR for any other Short Term Reliability Process Need, is a “Near-Term Reliability Need.”³ When a Near-Term Reliability Need is identified in a STAR, the NYISO solicits and selects solution(s) to address the need. The NYISO may choose to address Short-Term Reliability Needs that are not Near-Term Reliability Need within the STRP or, if time permits, through the long-term Reliability Planning Process that considers needs and solutions in years four through ten of the study period.⁴

The 2020 Quarter 3 STAR⁵ found Short-Term Reliability Needs on the Bulk Power Transmission Facilities (“BPTF”) starting in 2023 and increasing in scope and scale through 2025. The Short-Term Reliability Needs include both thermal overloads as well as dynamic instability on the bulk power system. For thermal loading, several overloaded 345 kV circuits in the Con Edison Company of New York, Inc. (“Con Edison”) service territory were observed under N-1-1 conditions beginning in year 2025. The specific violations are listed in Appendix A of the 2020 Quarter 3 STAR. Dynamic instability was observed starting in 2023 and continuing through 2025. The issues include low transient voltage response, loss of

¹ Capitalized terms in this report refer to defined terms in the NYISO’s Open Access Transmission Tariff (“OATT”). See OATT Article 1, Section 38.1 and Section 31.1.1.

² OATT Section 38.1 contains the tariff definition of a Short-Term Reliability Process Need.

³ OATT Section 38.1 contains the tariff definition of a Near-Term Reliability Need. See also, OATT Section 38.3.6, which sets forth provisions applicable to the treatment of Near-Term Reliability Needs.

⁴ The Reliability Planning Process is the preferred option. See OATT Section 38.2 and n.6, below.

⁵ <https://www.nyiso.com/documents/20142/16004172/2020-Q3-STAR-Report-vFinal.pdf/>

generator synchronism, and undamped voltage oscillations. The transient voltage response issues arise on transmission facilities owned by Con Edison in its transmission district but extend into areas adjacent to Con Edison’s service territory. The needs that were observed in the ozone season⁶ in 2023 are not Generator Deactivation Reliability Needs, and they arise within three years of the posting of the STAR in which the needs were identified (October 13, 2020), so they constitute Near-Term Reliability Needs (“Needs”). The needs identified in 2024 and 2025 will be addressed in the long-term Reliability Planning Process.⁷

The issues identified are primarily driven by a combination of forecasted peak demand and the assumed unavailability of certain generation in New York City affected by the New York State Department of Environmental Conservation’s “Peaker Rule.”⁸ The NYISO has accounted for the unavailability of generators affected by the DEC Peaker Rule as reflected in those generators’ compliance plans in accordance with the Reliability Planning Process base case inclusion rules.⁹ The plans indicate that approximately 1,500 MW of peaker capability would be unavailable during the summer by 2025 to comply with the emissions requirements. A subset of those generators would be unavailable starting in 2023. A summary of the list of peaker generation removals is provided in Figure 1 of the 2020 Quarter 3 STAR.

On November 16, 2020 the NYISO posted an updated peak load forecast to account for the expected impact of COVID-19 and the associated economic and societal effects.¹⁰ In consideration of the updated forecast, the NYISO found that dynamic instability is no longer observed under N-1 conditions, but dynamic instability is still observed in 2023 under N-1-1 conditions. The contingency combination resulting in N-1-1 BPTF stability criteria violations is the loss of Ravenswood 3 followed by event UC11. Event UC11 is a fault at Sprainbrook 345 kV and the loss of Sprainbrook – Tremont (X28) 345 kV and Buchanan – Sprainbrook (W93/W79) 345 kV. To address the violation, the necessary dynamic stability compensatory MVA as measured at the Farragut 345 kV and Astoria East 138 kV buses is 340 MVA.

The NYISO’s *Statement Regarding Identification of Near-Term Reliability Needs for the 2020 Quarter 3*

⁶ The ozone season runs from May 1 through September 30.

⁷ See OATT Section 38.2, which explains that the long-term Reliability Planning Process is the preferred process for addressing non-Generator Deactivation needs that arise on the BPTF more than three years after the completion of a STAR study.

⁸ The “Peaker Rule” is the commonly-used name for a New York State Department of Environmental Conservation (“DEC”) regulation that limits nitrogen oxides (NO_x) emissions from simple-cycle combustion turbines, as discussed in greater detail in the STAR.

⁹ See NYISO Reliability Planning Process Manual Section 3, December 12, 2019. Link: https://www.nyiso.com/documents/20142/2924447/rpp_mnl.pdf

¹⁰ Meeting material for November 19, 2020 ESPWG/TPAS: <https://www.nyiso.com/espwg>

*Short-Term Assessment of Reliability*¹¹ explains that the NYISO, in consultation with Con Edison, reviewed whether the adoption of alternative operating procedures could address the Needs identified in the STAR, and whether updates to Con Edison’s Local Transmission Owner Plan, could address the Needs.¹² The review did not identify operating procedures or updates to Con Edison’s Local Transmission Owner Plan at that time.¹³ The NYISO also reviewed the status of tracked projects and did not identify additional transmission or non-transmission solutions that are expected to enter or re-enter service by 2023.¹⁴

On December 3, 2020, the NYISO issued a solution solicitation requesting the submission of proposed STRP Solutions to address the 2023 Near-Term Reliability Needs.¹⁵ Proposed solutions were due to the NYISO on February 1, 2021.

Determination of the Short-Term Reliability Process Need Solution

In response to the solution solicitation to address the 340 MVA need in 2023, the NYISO received a regulated transmission solution from Con Edison, the Responsible Transmission Owner, and a proposed market-based generator solution from NRG Berrians East Development LLC.

Con Edison Regulated Transmission Solution

The series reactor status utilized in the 2020 Quarter 3 STAR assumed the series reactor protocol shown in Figure 1 for all study years.

¹¹ <https://www.nyiso.com/documents/20142/16004185/2020Q3STAR-NearTermReliabilityNeedExplanatoryStatement-vFinal.pdf>

¹² See OATT Section 38.3.5.2.

¹³ Con Edison proposed and subsequently withdrew an update to its Local Transmission Owner Plan in the NYISO’s stakeholder process. October 23, 2020: https://www.nyiso.com/documents/20142/16309511/03_CECONY's_2020_LTP_Update.pdf and November 2, 2020: https://www.nyiso.com/documents/20142/16507723/09_CECONY_Series_Reactor_Status_Final.pdf/.

¹⁴ As part of its ongoing Reliability Planning Process, the NYISO monitors and tracks the progress of market-based projects and regulated backstop solutions, together with other resource additions and retirements, consistent with its obligation to protect confidential information under its Code of Conduct. See OATT Section 31.2.13.

¹⁵ <https://www.nyiso.com/documents/20142/15930765/STRP-Q3-2020-Solicitation-Letter-Final.pdf>

Figure 1 2020 Reliability Planning Studies Series Reactor Status

Terminals		ID	kV	Series Reactor Status in 2020 Quarter 3 STAR
Dunwoodie	Mott Haven	71	345	Series Reactor By-Passed
Dunwoodie	Mott Haven	72	345	Series Reactor By-Passed
Sprainbrook	W. 49th Street	M51	345	Series Reactor By-Passed
Sprainbrook	W. 49th Street	M52	345	Series Reactor By-Passed
Farragut	Gowanus	41	345	Series Reactor In-Service
Farragut	Gowanus	42	345	Series Reactor In-Service
Sprainbrook	East Garden City	Y49	345	Series Reactor In-Service

In response to the solution solicitation, Con Edison proposes to revise the planned series reactor statuses to those listed in Figure 2. The planned status changes are for the summer period and would become effective starting in summer 2023.

Figure 2 Con Edison Proposed Series Reactor Status Starting Summer 2023

Terminals		ID	kV	Proposed Series Reactor Status
Dunwoodie	Mott Haven	71	345	Series Reactor In-Service
Dunwoodie	Mott Haven	72	345	Series Reactor In-Service
Sprainbrook	W. 49th Street	M51	345	Series Reactor In-Service
Sprainbrook	W. 49th Street	M52	345	Series Reactor In-Service
Farragut	Gowanus	41	345	Series Reactor By-Passed
Farragut	Gowanus	42	345	Series Reactor By-Passed
Sprainbrook	East Garden City	Y49	345	Series Reactor By-Passed

The NYISO has evaluated the viability and sufficiency of the proposed Con Edison regulated transmission solution and finds that it satisfies the Needs that arise in 2023. In evaluating the sufficiency of the proposed solution, the NYISO reviewed the cases with and without the Con Edison local transmission plans presented to stakeholders at the January 25, 2021 ESPWG/TPAS meeting¹⁶ and found that in both cases the solution Con Edison proposed is sufficient to address the 2023 Needs¹⁷. The BPTF transient voltage response issues observed in 2023 are fully resolved with the change in the series reactor protocol, without regard to whether the additional 345/138 kV PAR controlled feeders are in-service. The change in status of the seven 345 kV series reactors addresses the dynamic stability issues by providing

¹⁶ https://www.nyiso.com/documents/20142/18681129/2019_LTP_Coned.pdf/

¹⁷ The purpose of the update to the Con Edison Local Transmission Plan is to address previously identified local non-BPTF thermal needs. The STRP is only available to address non-BPTF needs when they are related to a Generator deactivation. See the definition of Generator Deactivation Reliability Need in OATT Section 38.1 and OATT Section 38.10.1.2. None of the needs that the NYISO identified in the Q3 2020 STAR are Generator Deactivation Reliability Needs.

balanced flows across the Dunwoodie South feeders and unbottling sufficient dynamic reactive power capability in Staten Island. The NYISO did not conduct scenario analysis to calculate how much reactive power capability could be removed from the system before dynamic instability occurs again.

This status change of the series reactors does not cause any other reliability issues. The change in 2023 results in an increase of 50 MW to the I-to-J (Dunwoodie South) emergency transfer limit and a decrease of 750 MW to the G-to-H (UPNY-ConEd) emergency transfer limit, as modeled in GE-MARS for resource adequacy purposes. The net effect has no adverse impact to system resource adequacy of the planned system.

Market-Based Solutions

In response to the solution solicitation the NYISO received one market-based solution. NRG Berrians East Development LLC proposes its Astoria Replacement Project (NYISO Interconnection Queue #393), a 437 MW generator project located in Zone J. The proposed commercial operation date of this project is June 2023.

Because certain required permits have not been obtained or progressed sufficiently, the NYISO determined that the proposed market-based generation project is not a viable solution for the Needs at this time.

Explanation of the Solution Selection

In consideration of all proposed solutions, only the Con Edison proposal is deemed viable and sufficient to meet the Near-Term Reliability Needs. Therefore, the NYISO selects the Con Edison regulated transmission solution.

Conclusion

In accordance with OATT Section 38.10.5, the NYISO: (i) posted its preliminary written determination of the STRP solution and presented it to stakeholders at the February 11, 2021 Electric System Planning Working Group/Transmission Planning Advisory (“ESPWG/TPAS”) subcommittee meeting; (ii) responded to stakeholder questions and took stakeholder comments at the ESPWG/TPAS meeting and invited the submission of written comments by February 17, 2021; (iii) posted the written comments that it received on its website; and (vi) following its consideration of all comments submitted, posted this Short-Term

Reliability Process Report on its website¹⁸. In consideration of all proposed solutions, only the Con Edison proposal is deemed viable and sufficient to meet the Near-Term Reliability Needs. Therefore, the NYISO selects the Con Edison regulated transmission solution.

As part of its ongoing Reliability Planning Process, the NYISO monitors and tracks the progress of market-based projects and regulated backstop solutions, together with other resource additions and retirements, consistent with its obligation to protect confidential information under its Code of Conduct. The 2021-2030 Comprehensive Reliability Plan will summarize system plans for the ten-year planning horizon, and if necessary address solutions for 2024 through 2030.

¹⁸ <https://www.nyiso.com/short-term-reliability-process>