2023
Local Transmission Plan (LTP)

November 23, 2023

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EXECUTIVE SUMMARY

Consolidated Edison Company of New York, Inc. (CECONY) conducted its 2023 Local Transmission Planning Process (LTPP) for its own Transmission District[1]. The report presents CECONY's Local Transmission Plan (LTP) for years 2024 through 2033.

2023 Local Transmission Plan Findings:

The 2023 CECONY' Local Transmission Plan (LTP) identified a local deficiency within its Greenwood 138 kV Transmission Load Area (TLA). The proposed solution is to offload the TLA with a 138 kV to 345 kV distribution load transfer to the Brooklyn Clean Energy Hub 345 kV Substation following its construction in 2028.

Otherwise, the 2023 CECONY's Local Transmission Plan (LTP) does not identify any other transmission reliability needs in CECONY's Transmission District under the assumptions established for this assessment over the next 10-year planning horizon (years 2023 through 2033).

In 2019, New York State passed the nation-leading Climate Leadership and Community Protection Act (CLCPA). Achieving the ambitious goals of CLCPA will mean transforming the way electricity is generated and used. For both New York City and New York State, it's clear that ramping up renewable development is a near-term priority. As the state moves to power the transportation sector and portions of building heating with renewable energy, demand for electricity in CECONY's Transmission District is likely to grow.

Due to fast moving changes to projected transmission system topology and generation mix, including changes in load behavior and its associated forecast, the Local Transmission Plan (LTP) is expected to be updated more frequently.

[1] Transmission District: The geographic area in which a Transmission Owner, including LIPA, is obligated to serve Load, as well as the customers directly interconnected with the transmission facilities of the Power Authority of the State of New York (as defined per NYISO OATT, Section 1.20, p102).

1. Introduction

Consolidated Edison Company of New York, Inc. (CECONY) conducted its Local Transmission Planning Process (LTPP) for its own Transmission District. As an outcome, the report presents CECONY's Local Transmission Plan (LTP) for years 2024 through 2033.

Per the NYISO Open Access Transmission Tariff (OATT)[2], CECONY's LTP together with LTPs from other New York Transmission Districts are used by the NYISO as an input into the Comprehensive System Planning Process (CSPP). Each cycle of CSPP commences with the LTPPs providing input into the Reliability Planning Process (RPP) covering year 4 through year 10 following the year of starting the study, along with Short-Term Reliability Process (STRP), covering year 1 through year 5 following the Short-Term Assessment of Reliability (STAR) Start Date of the study. The NYISO CSPP and STRP were approved by the Federal Energy Regulatory Commission (FERC) and its requirements are contained in Attachment Y and Attachment FF of the NYISO's OATT. The next cycle of CSPP will start with the 2024 RPP, which consists of two studies: (1) Reliability Needs Assessment (RNA) and (2) Comprehensive Reliability Plan (CRP).

Per the NYISO OATT[3], CECONY is required to post on its website Specification TP-7100 *Transmission Planning Criteria*[4] and assumptions used in its LTPP[5]. CECONY's *Transmission Planning Criteria* meets or exceeds requirements established in applicable North American Electric Reliability Council (NERC), Northeast Power Coordinating Council (NPCC) or New York State Reliability Council (NYSRC) Standards, Directories, and Reliability Rules. In addition, CECONY is required to take into consideration any comments received from Customers, Market Participants, and other interested parties regarding the posted material. CECONY has not received any comments on the assumptions in this round of LTPP.

[2] https://nyisoviewer.etariff.biz/ViewerDocLibrary/MasterTariffs/9FullTariffNYISOOATT.pdf
[3] NYISO OATT Section 31.2.1
[4] https://www.coned.com/-/media/files/coned/documents/business-partners/transmission-planning/transmission-planning-criteria.pdf?la=en
[5] https://www.coned.com/-/media/files/coned/documents/business-partners/transmission-planning/2023-long-range-plan-study-assumptions.pdf?

2. Assumptions

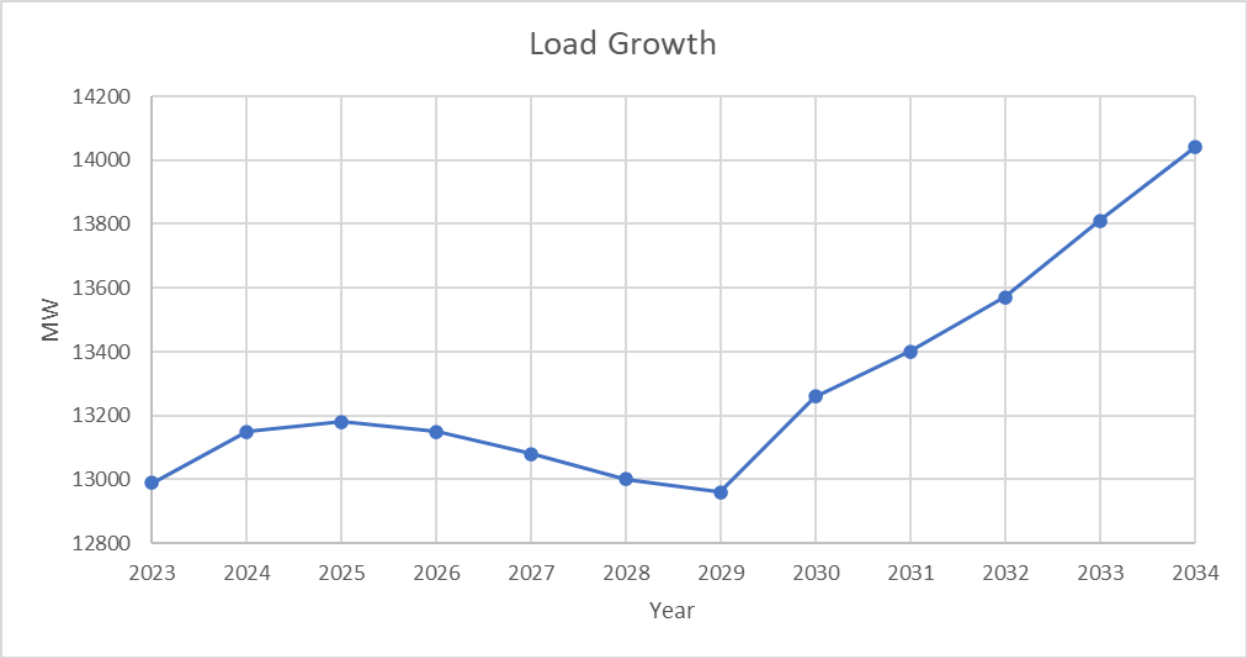
Per NYISO OATT CECONY posted on its website assumptions used in its LTPP.[6]

The study is based on the system represented in the power flow, stability and short circuit cases derived from the 2023 NYISO FERC 715 filing(s) and NYISO Load & Capacity Data "Gold Book". These power flow and short circuit databases are further updated consistent with the NYISO Reliability Planning Process practices, rules, and procedures.

2.1. Load Forecast

CECONY's Electric System Demand Forecast for years 2023 through 2033, developed just prior to initiation of the LTP study, is as follows:

Year	2023 Reference	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034 Reference
Load (MW)	12,990	13,150	13,180	13,150	13,080	13,000	12,960	13,260	13,400	13,570	13,810	14,040
% Growth	-	1.2	0.2	-0.2	-0.5	-0.6	-0.3	2.3	1.1	1.3	1.8	1.7



CECONY's load growth projected in this study is, for all intents and purposes, relatively flat for years 2023 thru 2029. The loads vary by a range of -0.6% to +1.2%. CECONY expects the forecast and annual load growth in its Transmission District to increase starting in 2030 due changes in load forecasting assumptions[7] and due to general impact of electrification.

[6] https://www.coned.com/-/media/files/coned/documents/business-partners/transmission-planning/2023-long-range-plan-study-assumptions.pdf?

[7] CECONY currently forecasts system peak load at a TV value of 86°F and based on the 2019 Climate Change Vulnerability Study (CCVS) it assumes an increase in 2030 to 87°F TV.

2.2. Generator Retirements / Additions

The study is based on the system represented in the power flow, stability and short circuit cases derived from the 2023 NYISO FERC 715 filing(s) and NYISO Load & Capacity Data "Gold Book". Any generator requirements / additions that were incorporated into the 2023 NYISO database were unchanged within this assessment.

2.3. Transmission Reconfigurations

2.3.1. Local Transmission System Upgrades / Reconfigurations

CECONY assumed in its 2023 LTP the following local system upgrades that result in system topology changes:

- Starting in Year 2025: New transmission path: 3rd 345/138 kV PAR controlled Gowanus – Greenwood feeder.
- Starting in Year 2025: New transmission path: 345/138 kV PAR controlled Goethals –Fox Hills feeder, with Fox Hills substation reconfigured into a Ring Bus.
- Starting in Year 2028: New transmission substation: 345kV Brooklyn Clean Energy Hub

2.3.2. Feeders A-2253, B-3402 and C-3403

Tie feeders B-3402 and C-3403 continue to be on a long-term outage. The flow assigned to tie feeder A-2253 is based on the NYISO/PJM Joint Operating Agreement. This assumption is carried throughout the 10-year study.

3. Assessments

3.1. Short Circuit Assessment

CECONY's 2023 LTP relies on concurrent analysis and conclusions from the Planning Assessment of the Bulk Electric System, an annual study that is performed in conjunction with the NYISO and other New York Transmission Owners as part of NYISO/ New York Transmission Owners (NYTOs) Coordinated Functional Registration (CFR) for the purpose of compliance with NERC Standard TPL-001 Transmission System Planning Performance Requirements. In addition, CECONY's 2023 LTP relies on concurrent analysis and conclusions from NYISO's 2022 Reliability Needs Assessment (RNA), NYISO's 2023 Comprehensive Reliability Plan (CRP) as well as NYISO's quarterly Short-Term Assessments of Reliability (STARs) as these relate to CECONY's Transmission District.

The short circuit analysis is performed in accordance with the "NYISO Guideline for Fault Current Assessment" and the CECONY Fault Current Assessment (Specification TP-5000) using the ASPEN One-Liner/Batch-Circuit program. Three-phase-to-ground, two-phase-to-ground, and single-phase-to-ground faults are simulated at CECONY's substations. At each substation, the highest of the three fault currents is compared against the lowest circuit breaker rating to determine if circuit breakers might be overbusied (initial screen). If calculated fault currents exceed the lowest rated breaker, then an Individual Breaker Analysis (IBA) would be conducted to determine the final breaker over-duty status.

The analysis shows that circuit breakers have the interrupting capability for the faults that they are expected to interrupt throughout the 10-year study horizon.

3.2. Thermal / Voltage Assessment

CECONY's Transmission System is divided into 17 Transmission Load Areas (TLAs). These TLAs are constrained by transmission and/or generation resources. In addition, each TLA's design contingency level depends on its Bulk Power System (BPS) or Bulk Electric System (BES) status. A TLA may be designed to Second contingency (N-1/-1/-0) or may be designed to First contingency (N-1/-1). The list of CECONY's TLAs with their design contingency level can be found in Specification TP-7100 *Transmission Planning Criteria*.

The study carries out thermal and voltage analysis for all 17 TLAs over the 10-year planning horizon. The study uses the Siemens PTI PSS®E and Powered TARA programs. The details of the analysis (description of TLA's design, controlling contingencies, etc.) for each TLA are set forth in the Appendix to this report.

Except for the Greenwood 138 kV TLA, the thermal and voltage analysis does not identify any transmission needs in CECONY's Transmission District under the assumptions established for this assessment over the 10-year planning horizon (years 2024 through 2033).

Based on the assumed independent forecast for the Greenwood 138 kV TLA CECONY has identified a local deficiency beginning in the year 2030. The TLA becomes deficient by 17 MW in 2030, followed by an increase in deficiency by about 20 MW every year until the year 2033. The proposed solution is to offload the TLA with a 138 kV to 345 kV distribution load transfer to the Brooklyn Clean Energy Hub 345 kV Substation following its construction in 2028.

3.3. Stability Assessment

As is done with the Short Circuit Assessment, the Stability Assessment also relies on concurrent analysis and conclusions from pertinent other studies (see section 3.1).

As stability analysis is a wide area impact analysis, the NYISO performs the state-wide stability analysis. CECONY identified contingencies for NYISO's assessment. This analysis is carried out using the Siemens PTI PSS®E Rev. 34 software in accordance with the "NYISO Guideline for Stability Analysis and Determination of Stability-Based Transfer Limits".

Since the last issuance of CECONY's LTP, the NYISO did not observed any stability violations within CECONY's Transmission District.

3.4. Extreme Contingency Assessment

CECONY's 2023 LTP also relies on concurrent analysis and conclusions from pertinent other studies (see section 3.1).

As Extreme Events analysis is a wide area impact analysis, the NYISO performs it. The analysis is carried out using the Siemens PTI PSS®E (steady state and dynamics) and PowerGEM TARA (steady state) programs.

The NYISO study for the steady state extreme event analysis concludes that most contingencies show no cascading for all steady state base and sensitivity cases. However, some contingencies cause voltage violations, significant voltage drops, and/or thermal overloads over the Short-Term Emergency (STE) rating on the transmission system. In addition, the NYISO concluded that, for stability Extreme Event analysis, most extreme contingencies evaluated converge, are stable and damped, and do not cascade. For some events, voltage recovery issues are observed but they are local to the contingency event.

For these extreme events, the NYISO further evaluated possible actions designed to reduce the likelihood or mitigate the consequences and adverse impacts of these events, which could be utilized in the future expansion of the transmission system.

3.5. Transient Assessment

There was no Transient Assessment performed as part of 2023 LTP. Transient Assessment is performed as major changes occur in the topography of the Con Edison transmission infrastructure to ensure that electrical equipment (e.g., circuit breakers, transformers) are protected against transient overvoltage and harmful resonance conditions caused by switching operations and/or potential contingency events.

4. Non-Firm Plans[8]

4.1. CLCPA

The CLCPA mandates the transformation of the New York State's energy supply portfolio. Integration of such large quantities of clean energy resources to local transmission and distribution facilities will require CECONY to determine how to accommodate such resources and deliver the power to loads through the implementation of local transmission system expansion projects. CECONY will be developing such project as part of the Coordinated Grid Planning Process (CGPP) to be initiated late 2023 / early 2024.

4.2. Eastern Queens 138 kV Substation

CECONY plans to construct a new 138 kV load serving Substation in Eastern Queens to provide supply to the new Idlewild 27kV Distribution Area Substation. The need is driven by growing electric demand in Queens whereas the existing Jamaica 27 kV Distribution Area Substation cannot meet the projected growth. The new Idlewild 27 kV Distribution Area Substation will transfer load our of Jamaica 27kV Distribution Area Substation (about 170 MW in 2028). The project's projected in-service date is summer 2028.

[8] The New York Public Service Commission (NYPSC) is considering local transmission needs driven by the Public Policy Requirements of the CLCPA, and solutions to address them, in Case 20-E-0197 – Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act.

5. Conclusions

Consolidated Edison Company of New York (CECONY) conducted its 2023 Local Transmission Planning Process (LTPP) for its own Transmission District. The following is CECONY's conclusion as it relates to its Local Transmission Plan (LTP) for years 2024 through 2033.

2023 Local Transmission Plan Findings:

The 2023 CECONY' Local Transmission Plan (LTP) identified a local deficiency within its Greenwood 138 kV Transmission Load Area (TLA). The proposed solution is to offload the TLA with a 138 kV to 345 kV distribution load transfer to the Brooklyn Clean Energy Hub 345 kV Substation following its construction in 2028.

Otherwise, the 2023 CECONY's Local Transmission Plan (LTP) does not identify any other transmission reliability needs in CECONY's Transmission District under the assumptions established for this assessment over the next 10-year planning horizon (years 2023 through 2033).

Due to fast moving changes to projected transmission system topology and generation mix, including changes in load behavior and its associated forecast, the Local Transmission Plan (LTP) is expected to be updated more frequently.

Appendix

New York City 345/138 kV Transmission Load Area (TLA)

The New York City 345/138 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal, voltage and stability limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The first level controlling contingency for this TLA is the loss of the 345 kV feeder Q11 (Mott Haven – Rainey). The second level controlling contingency for this TLA is Ravenswood 3.

In year 2026, the first level controlling contingency for this TLA will be the loss of the 345 kV feeder Q631 (Champlain Hudson Power Express (CHPE) – Astoria Annex). The second level controlling contingency for this TLA will remain Ravenswood 3.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

West 49th Street 345 kV Transmission Load Area (TLA)

The West 49th Street 345 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The first level controlling contingency for this TLA is loss of the 345kV feeder M51 (Sprain Brook – West 49th Street). The second level controlling contingency for this TLA is loss of the 345 kV feeder M52 (Sprain Brook – West 49th Street).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

East 13th Street 138 kV Transmission Load Area (TLA)

The East 13th Street 138 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The first level controlling contingency for this TLA is the loss of the 345 kV feeder 46 (East 13th Street – Farragut) with and associated 345/138 kV feeder 37372 (East 13th Street 345 kV – East 13th Street 138 kV). The second level controlling contingency for this TLA is the loss of the 345 kV feeder Q35M (East 13th Street – Astoria Annex) with an associated 345/138 kV feeder 37376 (East 13th Street 345 kV – East 13th Street 138 kV).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Astoria East/Corona 138 kV Transmission Load Area (TLA)

The Astoria East/Corona 138 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The first level controlling contingency for this TLA is Astoria Energy I. The second level controlling contingency for this TLA is the loss of feeder 34901 and Astoria 2.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Astoria West/Queensbridge 138 kV Transmission Load Area (TLA)

The Astoria West/Queensbridge 138 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The first level controlling contingency for this TLA is the loss of NYPA CC1/CC2. The second level controlling contingency for this TLA is loss of Astoria 5.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Vernon/Queensbridge 138 kV Transmission Load Area (TLA)

The Vernon/Queensbridge 138 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The first level controlling contingency for this TLA is the loss of Ravenswood 1. The second level controlling contingency for this TLA is loss of Ravenswood 2.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

East River 138 kV Transmission Load Area (TLA)

The East River 138 kV Transmission Load Area (TLA) is designed for second contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls. In addition, after the second contingency has occurred, the system must be returned to within its normal state limits using all available operating reserves and system controls (N-1/-1/-0).

The controlling contingency for this TLA is the failure of breaker BT 6-7 at East River 69 kV substation resulting in the loss of East River 6 and East River 7 (single event: N-1/-0). Other N-1/-1/-0 contingencies can be mitigated by the utilization of placing an Emergency Tie feeder 44372 in-service.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied, and the system was returned to within its Normal state limits (N-1/-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Millwood/Buchanan 138 kV Transmission Load Area (TLA)

The Millwood/Buchannan 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is the loss of 345/138 kV transformer TA2 (Millwood 345 kV – Millwood 138 kV). The second level controlling contingency for this TLA is the loss of 345/138 kV transformer TA5 (Buchanan North 345 kV – Millwood 138 kV).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Eastview 138 kV Transmission Load Area (TLA)

The Eastview 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. In addition, the system must be able to be returned to within its normal state limits using all available operating reserves and system controls (N-1/-0).

The first level controlling contingency for this TLA is the Loss of Common Tower, transformers 1N and 1S and 345 kV feeders W78, W85, W64, and W99.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Dunwoodie North/Sherman Creek 138 kV Transmission Load Area (TLA)

The Dunwoodie North/Sherman Creek 138kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is the loss of 345 kV feeder M29 (Sprain Brook – Academy). The second level controlling contingency for this TLA is loss of 345/138 kV feeder W74 (Dunwoodie 345 kV – Dunwoodie North 138 kV).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Dunwoodie South kV Transmission Load Area (TLA)

The Dunwoodie South 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is the loss of 345 kV feeder W73 (Dunwoodie 345 kV – Dunwoodie South). The second level controlling contingency for this TLA is loss of 345 kV feeder 99942 (Sprain Brook 345 kV – Dunwoodie South 138 kV).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

The Bronx 138 kV Transmission Load Area (TLA)

The Bronx 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is the loss of 345 kV feeder M29 (Sprain Brook – Academy). The second level controlling contingency for this TLA is the loss of the 345 kV feeder X28 (Sprain Brook – Tremont).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system.

In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Eastern Queens 138 kV Transmission Load Area (TLA)

The Eastern Queens 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is Astoria Energy I. The second level controlling contingency for this TLA is the loss of feeder 34901 and Astoria 2.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Brooklyn/Queens 138 kV Transmission Load Area (TLA)

The Brooklyn Queens 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is the loss of NYPA CC1/CC2. The second level controlling contingency for this TLA is loss of Astoria 5.

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Corona/Jamaica 138 kV Transmission Load Area (TLA)

The Corona/Jamaica 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

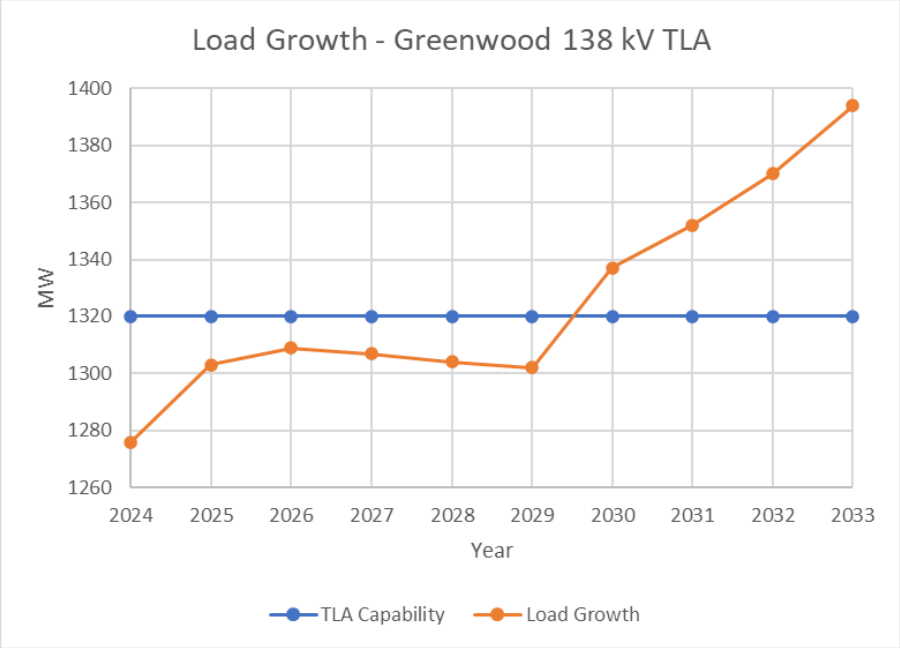
The controlling contingency for this TLA is the loss of loss of 345 kV feeder Y50 (Dunwoodie – Shore Road); resulting in the loss of 300 MW wheeling service on 901L/M and 903 138 kV circuits. The second level controlling contingency for this TLA is the loss of the 138 kV feeder 701 (Hudson Avenue East – Jamaica).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Greenwood/Fox Hills 138 kV Transmission Load Area (TLA)

The Greenwood/Fox Hills 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

Based on the assumed independent forecast (Graph 1), the study identified local deficiency within the Greenwood 138 kV TLA beginning in year 2030 (Table 1).



Graph 1: Greenwood 138 kV Transmission Load Area Load Growth vs. TLA Capability

	Deficiency (MW)	Duration (hours)	Deficiency (MWh)	Duration
Year 2030	17	6	53	4 PM - 10 PM
Year 2031	32	8	152	3 PM - 11 PM
Year 2032	50	9	307	2 PM - 11 PM
Year 2033	74	10	525	1 PM - 11 PM

Table 1: Greenwood 138 kV TLA MW and MWh deficiency

The proposed solution is to offload the Greenwood 138 kV TLA with a 138 kV to 345 kV distribution load transfer to the Brooklyn Clean Energy Hub following its construction in 2028.

With the application of the load transfer solution, all applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system. All local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.

Staten Island 138 kV Transmission Load Area (TLA)

The Staten Island 138 kV Transmission Load Area (TLA) is designed for first contingency. For the limiting scenario testing, applicable post-contingency thermal and voltage limits shall not be exceeded. Prior to testing for the second contingency, the system should be able to be returned to its normal state limits utilizing ten-minute operating reserves and system controls (N-1/-1).

The first level controlling contingency for this TLA is the loss of Arthur Kill 2. The second level controlling contingency for this TLA is loss of the 345/138 kV feeder 21191 (Fresh Kills 345 kV – Fresh Kills 138 kV).

Applicable immediate post-contingency thermal and voltage limits were not exceeded when the controlling (N-1) contingency was applied, and the local system was returned to within its Normal state limits (N-1/-0). Applicable immediate post contingency thermal and voltage limits were also not exceeded when the controlling (N-1/-1) contingency was applied and the system.

In addition, all local design contingencies were applied to the area in order to ascertain the list of controlling contingencies.