



2019 Local Transmission Plan (LTP)

Draft Report

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EXECUTIVE SUMMARY

Consolidated Edison Company of New York (CECONY) conducted its 2019 Local Transmission Planning Process (LTPP) for its own Transmission District¹. The report presents CECONY's Local Transmission Plan (LTP) for years 2019 through 2028.

2019 Local Transmission Plan Findings:

The 2019 CECONY's Local Transmission Plan (LTP) does not identify any transmission needs in CECONY's Transmission District under the assumptions established for this assessment over the next 10-year planning horizon (years 2019 through 2028).

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).

1. Introduction

Consolidated Edison Company of New York (CECONY) conducted its Local Transmission Planning Process (LTPP) for its own Transmission District. The report presents CECONY's Local Transmission Plan (LTP) for years 2019 through 2028.

Per NYISO Open Access Transmission Tariff (OATT)², CECONY's LTP together with LTP's from other New York Transmission Districts is used by the NYISO as an input into the Comprehensive System Planning Process (CSPP) where each cycle of CSPP commences with the LTPPs providing input into the Reliability Planning Process (RPP). The NYISO CSPP was approved by the Federal Energy Regulatory Commission (FERC) and its requirements are contained in Attachment Y of the NYISO's OATT. The next cycle of CSPP will start with the 2020 RPP, which consists of two studies: (1) Reliability Needs Assessment (RNA) and (2) Comprehensive Reliability Plan (CRP).

Per NYISO OATT³, CECONY is required to post on its website Specification TP-7100 *Transmission Planning Criteria*⁴ and assumptions used in its LTPP⁵. CECONY's *Transmission Planning Criteria* meets or exceeds requirements established in applicable NERC, NPCC or 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 toward the posted material. CECONY has not received any comments in this round of LTPP.

Currently, the CECONY system has no transmission needs driven by a Public Policy Requirement⁶.

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/2019-long-range-plan-study-assumptions.pdf?la=en>

⁶ Public Policy Requirement: A federal or New York State statute or regulation, including a NYPSC order adopting a rule or regulation subject to and in accordance with the State Administrative Procedure Act, any successor statute, or any duly enacted law or regulation passed by a local governmental entity in New York State, that may relate to transmission planning on the BPTFs (as defined per NYISO OATT).

2. Assumptions

Per NYISO OATT CECONY posted on its website assumptions used in its LTP.

The study is based on the system represented in the power flow, stability and short circuit cases derived from the 2018 and 2019 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 System Electric System Demand Forecast for years 2019 through 2028 is as follows: (System coincident loads including transmission losses)

Y2019	Y2020	Y2021	Y2022	Y2023	Y2024	Y2025	Y2026	Y2027	Y2028
13,270	13,320	13,370	13,380	13,270	13,260	13,280	13,280	13,260	13,250

Overall, CECONY’s load growth is, for all intents and purposes, flat over the 10-year planning horizon, with loads varying from that in 2019 by a range from -0.2% to +0.8% in the 2020-2028 period.

2.2. Generator Retirements / Additions

2.2.1. Retirement of Indian Point Energy Center

On November 13, 2017 the NYISO determined that Entergy Nuclear Power Marketing, LLC (Entergy) had submitted a complete Generator Deactivation Notice for the proposed retirement of the Indian Point Unit 2 and Unit 3. Entergy reported that it intends to deactivate the 1,299 MW (nameplate) Indian Point Energy Unit 2 on April 30, 2020 and the 1,012 MW (nameplate) Indian Point Energy Unit 3 on April 30, 2021. The NYISO concluded, in its assessment, that Entergy has satisfied the applicable requirements under the NYISO’s Generator Deactivation Process to retire the Generators on or after its requested deactivation date.⁷

CECONY assumed in its 2019 LTP the above dates as the dates for the retirement of Indian Point Unit 2 and Unit 3.

⁷ Generator Deactivation Assessment Indian Point Energy Center (12/13/2017).

2.2.2. Cricket Valley Energy Center

NYISO Queue #444 Cricket Valley is a 1,020 MW combined cycle generation project proposed by Cricket Valley Energy Center, LLC to interconnect to CECONY's Pleasant Valley – Long Mountain 345 kV Line. CECONY assumed in its LTP that this generating facility, together with the associated 345 kV substation and a new 345 kV Pleasant Valley – Cricket Valley feeder, will be operational prior to summer 2020.

2.3. Transmission Reconfigurations

2.3.1. Local Transmission System Upgrades / Reconfigurations

CECONY assumed in its 2019 LTP the following local system upgrades that result in system topology changes:

- Starting in Year 2019: Addition of a 345/138 kV PAR controlled Rainey – Corona feeder.
- Starting in Year 2019: Addition of a 345 kV breaker at the East 13th Street substation.
- Starting in Year 2019: Addition of a 138 kV breaker at the Jamaica substation.
- Starting in Year 2019: For the purposes of Distribution System, under peak load conditions, the 138 kV transmission feeder 32077 is operated radially from Farragut in order to supply Water Street Area Station through 138/27 kV Transformer #4.
- Starting in Year 2024: Hudson Avenue Distribution Substation (DSS) will be installed to support Water Street and Plymouth Area Stations under post-contingency conditions.

2.3.2. AC Transmission Segment A and Segment B

CECONY's LTP includes in its thermal/voltage assessment the selection of the AC Transmission Public Policy Transmission Projects, which are the North American Transmission (NAT)/New York Power Authority (NYPA) (NYISO Queue #556) Segment 'A' Double Circuit project and the National Grid/Transco (NYISO Queue #543) New York Energy Solution Segment 'B' project. These projects have limited impact on CECONY's local transmission system.

2.3.3. 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.

2.4. Other Assumptions

The State of New York has several initiatives to meet environmental goals that will affect the state's grid during the study period. These include, Nitrogen (NOx) Emission Limits for Simple Cycle and Regenerative Combustion Turbines as well as the incorporation of a high percentage of renewable resources into the system. It is still too early for CECONY to make assumptions on its own, independent from the NYISO, so this LTP makes none.

3. Assessments

3.1. Short Circuit Assessment

CECONY's 2019 LRP relies on concurrent analysis and conclusions from its 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/NYTOs Coordinated Functional Registration (CFR) for the purpose of compliance with NERC Standard TPL-001 Transmission System Planning Performance Requirements. This Planning Assessment evaluated the planned system for the study period of 2019 to 2028 which matches CECONY's 2019 LRP study period.

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 overdutied (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 and can be "stand alone" TLAs or can be "imbedded" TLAs. In addition, each TLA's design contingency level depends on its BPS or BES status. A TLA may be designed to Second contingency (N-1/-1/-0) or can 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 TLA over the 10-year planning horizon. The study uses the Siemens PTI PSS®E and PowerGEM TARA programs. The details of the analysis (description of TLA's design, controlling contingencies, etc.) for each TLA are described in Appendix to this report.

Overall, 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 2019 through 2028).

3.3. Stability Assessment

As is done with the Short Circuit Assessment (see section 3.1), CECONY's 2019 LRP relies on concurrent analysis and conclusions from its Planning Assessment of the Bulk Electric System. 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. 33 software in accordance with the "NYISO Guideline for Stability Analysis and Determination of Stability-Based Transfer Limits". The NYISO concluded that for the identified events and as a result of transient swings, no generating unit steps out of synchronism, no tripping of transmission lines and transformers happens due to operation of generic or actual relay models, and all BES power oscillations exhibit acceptable damping.

3.4. Extreme Contingency Assessment

CECONY's 2019 LRP also relies on concurrent analysis and conclusions from its Planning Assessment of the Bulk Electric System. As Extreme Events analysis is a wide area impact analysis, the NYISO performs the analysis. The analysis is carried out using the Siemens PTI PSS®E (steady state and dynamics) and PowerGEM TARA (steady state) programs.

The NYISO study conclude that the steady state extreme event analysis showed no cascading outages for all steady state base and sensitivity cases. Some contingencies showed voltage violations, significant voltage drops, and/or thermal overloads on the underlying 138 kV sub-transmission system. Cascading analysis show that some contingencies have significant load and generation losses, but these conditions are local in nature; therefore, the NYISO concluded that no further evaluation of possible actions designed to reduce the likelihood or mitigate the consequences and adverse impacts of the events is necessary.

In addition, the NYISO concluded that for stability Extreme Event analysis all studied contingencies are stable and damped. In all of the evaluated cases and conditions tested, the affected area is confined to the NYCA system. No widespread system disturbances are observed.

3.5. Transient Assessment

There were no Transient Assessment performed as part of 2019 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. Conclusions

Consolidated Edison Company of New York (CECONY) conducted its 2019 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 2019 through 2028.

2019 Local Transmission Plan Findings:

The 2019 CECONY's Local Transmission Plan (LTP) does not identify any transmission needs in CECONY's Transmission District under the assumptions established for this assessment over the 10-years planning horizon (years 2019 through 2028).

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.

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/Buchanan 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 failure of breaker 4E at Jamaica resulting in the loss of 138 kV feeder 901L/M (Jamaica – Valley Stream) and 138 kV feeder 702 (Jamaica – Hudson Avenue); a single event (N-1/-0) which is more severe than other N-1/-1 contingencies which can be mitigated.

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).

The controlling contingency for this TLA is the failure of breaker 4S at Greenwood resulting in the loss of Gowanus GT 2 and 4, NYPA GT 5 and 6, and feeder 42231 (Gowanus – Greenwood); a single event (N-1/-0) which is more severe than other N-1/-1 contingencies which can be mitigated.

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.

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.