New York ISO
Independent System Operator

Annual Transmission Planning and Evaluation Report (FERC Form No. 715)

A Report by the New York Independent System Operator

April 1, 2023

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About the New York Independent System Operator

The New York Independent System Operator, Inc. ("NYISO"), headquartered in Rensselaer, New York, is an independent, nonprofit corporation established to maintain the continued reliable operation of the New York State ("NYS") bulk electric system, and to facilitate the wholesale electricity markets throughout the State. NYISO began operation on November 18, 1999, and formally assumed responsibility for operation of the bulk electric system from the New York Power Pool ("NYPP") on December 1, 1999. NYISO is regulated by the Federal Energy Regulatory Commission ("FERC" or "the Commission").

NYISO provides for reliable and efficient operation of the NYS bulk electric system by coordinating operation of the state's bulk power transmission facilities, and by committing and dispatching generation resources throughout the state on a single-system basis, in accordance with prescribed reliability rules. NYISO coordinates transmission service and facilitates the state's wholesale electricity markets through the NYISO Open Access Transmission Tariff ("OATT"), the NYISO Market Administration and Control Area Services Tariff, and various agreements. NYISO also performs studies in support of planning of the NYS electric system, and to evaluate the impact of proposed interconnections of new generation, transmission, and load facilities to the transmission system.

The NYS electric system is part of a continental power system that encompasses the eastern United States and eastern Canada. NYISO is a registered entity of the North American Electric Reliability Corporation ("NERC"), the mission of which is to ensure the reliability of the North American bulk electric system. NYISO is also a member of the Northeast Power Coordinating Council ("NPCC"), which is one of six regional entities of NERC covering the region comprised of New York, New England, Ontario, Quebec, and the Maritimes (New Brunswick, Nova Scotia, and Prince Edward Island). Together, NERC and the regional entities establish reliability standards for the interconnected electric systems, and monitor the compliance of the industry participants, and organizations such as the NYISO, to those standards. In addition, NYISO is also subject to the reliability rules of the New York State Reliability Council ("NYSRC"), an organization established to address the special reliability needs of NYS.

NYISO conducts transmission operation and planning activities in coordination with eleven transmission owners and operators in NYS ("NYTOs"), which are:

- Central Hudson Gas & Electric Corporation
- Consolidated Edison Company of New York, Inc.
- Long Island Power Authority
- New York Power Authority

- New York State Electric & Gas Corporation
- New York Transco, LLC
- Niagara Mohawk, A National Grid Company
- Orange and Rockland Utilities, Inc.
- Rochester Gas and Electric Corporation
- NextEra Energy Transmission New York, Inc.
- LS Power Grid New York Corporation I

Foreword

This is the NYISO Annual Transmission Planning and Evaluation Report ("FERC Form No. 715 Report" or "FERC-715 Report") for 2023. NYISO is submitting a paperless filing again this year. This report was prepared in accordance with the FERC Form No. 715 - Annual Transmission Planning and Evaluation Report Instructions[1] and in accordance with the 2023 Filing Instructions for a paperless submittal.[2]

In 2000, NYISO assumed responsibility for filing the annual FERC-715 Report on behalf of the NYTOs, a task previously performed by the NYPP. Also, the NYISO conducts transmission planning activities in coordination with the NYTOs, each of which are "transmitting utilities" as defined by FERC. The NYTOs are identified in Part 1 of this report. For this filing, the NYISO is also filing on behalf of Alcoa Power Generating Inc. Long Sault Division.

This report consists of six parts, corresponding to the six parts specified in the FERC-715 Instructions. In accordance with the FERC-715 Instructions, all previously filed documents that have not changed are also included along with the new or revised documents in the FERC 715 submission. For Part 3, all of the most recent maps and diagrams are provided in PDF files, in accordance with the Commission's instructions for a paperless submittal.

All but one document in Part 2 and the one-line diagrams in Part 3 have been labeled as Critical Energy Infrastructure Information ("CEII"), in accordance with NYISO's policies and procedures, and are not attached to this public report. NYISO understands that the Commission considers the information collected in FERC-715 as CEII.

The non-CEII portions of this report will be available from the NYISO public web site at

(https://www.nyiso.com/ny-power-system-information-outlook). Access to portions of the report that contain CEII will be restricted to parties that obtain or have the proper authorization. Instructions for requesting CEII contained in this report are provided in Appendix A.

The information contained in this report pertains to NYISO transmission planning and evaluation matters in general, and is valid as of the April 1, 2023, filing date. In the event that this information may be used for a specific purpose, the user may wish to contact NYISO or the appropriate NYTO contact person(s) identified in Part 1 of this report to ascertain whether this information is appropriate and sufficient for the intended purpose.

[1] FERC 715 Report Instructions ("Form No. 715 Instructions")
[2] FERC 715 Filing Instructions

Part 1: Identification and Certification

The certifications of the authorized officials of each of the transmitting utilities that provided information to NYISO for this filing are included in this part of the report.

Organization Names and Addresses

New York Independent System Operator 10 Krey Boulevard Rensselaer, NY 12144	
Central Hudson Gas & Electric Corporation 284 South Avenue Poughkeepsie, NY 12601-4879	**New York State Electric & Gas Corporation** 18 Link Drive Binghamton, NY 13904
Consolidated Edison Company of New York, Inc. 4 Irving Place New York, NY 10003	**New York Transco, LLC** 1 Hudson City Center Suite 300 Hudson NY, 12534
Long Island Power Authority 333 Earle Ovington Boulevard Suite 403 Uniondale, NY 11553	**Niagara Mohawk, A National Grid Company** 300 Erie Boulevard West Syracuse, NY 13202
New York Power Authority 123 Main Street White Plains, NY ,10601	**Orange and Rockland Utilities, Inc.** 390 Route 59 Spring Valley, NY 10977
Alcoa Power Generating Inc. Long Sault Division C/O Alcoa USA Corp. 1814 St. Hwy 131 Massena, NY 13662	**Rochester Gas and Electric Corporation** 89 East Avenue Rochester, NY 14649
NextEra Energy Transmission New York, Inc. 13 Executive Park Drive Clifton Park, NY 12065	**LS Power Grid New York Corporation I** 13 Corporate Dr. Halfmoon, NY 12065

Contact Persons

Organization	Contact Name/Title	Telephone/Fax/email
New York Independent System Operator	Pramila Nirbhavane Manager, System Modeling	518-356-8783 518-356-7570 pnirbhavane@nyiso.com
Central Hudson Gas & Electric Corporation	Richard B. Wright Principal Engineer Electric Planning and Interconnections	845-486-5463 845-486-5697 rwright@cenhud.com
Consolidated Edison Company of New York, Inc.	Aleksandra Gofman Senior Engineer Transmission Planning	212-460-6116 212-529-1130 GOFMANA@coned.com
PSEG Long Island, Agent for Long Island Power Authority	Nicholas Culpepper Manager, Transmission Planning PSEG Long Island Agent for Long Island Power Authority	516-949-7274 Nicholas.Culpepper@pseg.com
New York Power Authority	Xia Jiang Senior Director, System Studies and Planning	914- 681-6304 Xia.Jiang@nypa.gov
New York State Electric & Gas Corporation, and Rochester Gas and Electric Corporation	Mark Gaines Senior Engineer, Transmission Planning	580.458.7383 mark.gaines@avangrid.com
New York Transco, LLC	Paul Haering Vice President, Capital Investments	518-444-4880 Paul.Haering@NYTransco.com
Niagara Mohawk Power Corporation	Mark F. Domino Engineering Manager, Transmission Planning - NY	315-428-5781 Mark.Domino@nationalgrid.com
Orange and Rockland Utilities, Inc.	Roleto Mangonon Principal Engineer, Transmission Planning	845-577-3326 845-577-3720 mangononr@oru.com
Alcoa Power Generating Inc. Long Sault Division	Jarrod Davis Power System Manager	(315) 250-9728 jarrod.davis@alcoa.com
NextEra Energy Transmission New York, Inc.	Bharath Annabathina Project Director, Development NextEra Energy Transmission New York, Inc.	914-255-8859 bharath.annabathina@nexteraenergy.com
LS Power Grid New York Corporation I	Ramya Nagarajan Senior Manager, Transmission Planning	737-881-5008 rnagarajan@lspower.com

I certify that, to the best of my knowledge, the information and data submitted in this form by NYISO staff, on behalf of the transmitting utilities identified in Part 1, is complete and accurate, and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report."

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Pramila Nirbhavane
Manager, System Modeling
New York Independent System Operator

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by Central Hudson Gas & Electric Corporation (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Richard B. Wright
Principal Engineer, Electric Planning and Interconnections
Central Hudson Gas & Electric Corporation

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by Consolidated Edison Company of New York, Inc. (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Aleksandra Gofman
Senior Engineer, Transmission Planning
Consolidated Edison Company of New York, Inc.

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by PSEG Long Island, Agent for the Long Island Power Authority (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Nicholas Culpepper
Manager, Transmission Planning PSEG
Long Island
Agent for the Long Island Power Authority

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by New York Power Authority (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Xia Jiang
Senior Director, System Studies and Planning
New York Power Authority

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation (transmitting utilities) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Mark Gaines

Senior Engineer, Transmission Planning
New York State Electric & Gas Corporation and
Rochester Gas and Electric Corporation

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by New York Transco, LLC (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Paul Haering
Vice President, Capital Investments
New York Transco, LLC

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by Niagara Mohawk Power Corporation, *dba* National Grid (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Mark Domino, PE
Engineering Manager

Transmission Planning - NY
Niagara Mohawk Power Corporation

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by Orange and Rockland Utilities, Inc. (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Roleto Mangonon
Principal Engineer, Transmission Planning Orange
and Rockland Utilities, Inc.

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by Alcoa Power Generating Inc. Long Sault Division (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Jarrod Davis
Power System Manager
Alcoa Power Generating Inc. Long Sault Division

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by NextEra Energy Transmission New York, Inc. (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Bharath Annabathina
Project Director, Development
NextEra Energy Transmission New York, Inc.

CERTIFICATION

I certify that, to the best of my knowledge, the information and data provided by LS Power Grid New York Corporation I (transmitting utility) to NYISO (designated agent) for this filing is accurate and in compliance with the "Instructions for Completing Form 715 Annual Transmission Planning and Evaluation Report." I authorize NYISO staff to submit this information and data on our behalf.

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Ramya Nagarajan
Senior Manager, Transmission Planning
LS Power Grid New York Corporation I

Part 2: Power Flow Base Cases

The following power flow base cases are included in this part of the report:

- Case #1: Summer 2023 Peak Load
- Case #2: Winter 2023/2024Peak Load
- Case #3: Spring 2024 Light Load
- Case #4: Summer 2024 Peak Load
- Case #5: Summer 2024 Peak Load based on a 90/10 statewide forecast
- Case #6: Winter 2024/2025 Peak Load
- Case #7: Spring 2028 Light Load
- Case #8: Summer 2028 Peak Load
- Case #9: Summer 2028 Peak Load based on a 90/10 statewide forecast
- Case #10: Winter 2028/2029 Peak Load
- Case #11: Summer 2033 Peak Load
- Case #12: Winter 2033/2034 Peak Load

NYISO and the NYTOs named in Part 1 participate in the NPCC regional base case development process. NYISO maintains a centralized database of power flow data for the NYS electric power system for use in both planning and operating studies. Through an annual process, the NYTOs provide data to NYISO to update the NYS power flow base cases, and NYISO in turn updates its centralized database and provides data to NPCC to update its regional base cases. NPCC compiles the regional base cases and makes them available to its members and to NERC.

The above base cases were initially based on the Eastern Interconnection Reliability Assessment Group ("ERAG") Multiregional Modeling Working Group ("MMWG") 2022 base cases. The NYISO reviewed and updated the NYS and outside area representations in these cases based on information provided to NYISO up through approximately March 1, 2023.

The first and second cases are developed for use as part of the NYISO summer 2023 and winter 2023/2024 Operating Studies. In general, these cases represent the existing transmission system and system conditions expected to occur at the time of the respective seasonal peak load. These cases would be appropriate for use as a starting point for current year (2023) transmission studies.

The last ten cases represent the planned transmission system and forecasted system conditions in future years, in this case, 2024(near-term), 2028 (mid-term) and 2033 (long-term). The four near-term

cases were developed to satisfy NERC standards requirements for near-term (one year out) transmission assessments. The near-term cases represent only proposed new or modified generation and transmission facilities that are planned to occur within that time frame. The NYS representations for the mid-term and long-term cases include only those future new or modified generation and transmission facilities that: (1) have met the inclusion rules set forth in Section 25.5.5.1 of Attachment S to the NYISO's OATT or may meet the Reliability Needs Assessment ("RNA") base cases inclusion rules set forth in the NYISO Reliability Planning Process Manual; (2) have been proposed by the NYTOs as firm projects; and (3) for cross border projects in both the NYISO queue and a neighboring Regional Transmission Operator or Independent System Operator queue, have (a) met the inclusion rules set forth in Section 25.5.5.1 of Attachment S to the NYISO's OATT or may meet the RNA base cases inclusion rules set forth in the NYISO Reliability Planning Process Manual; and (b) may meet the inclusion rules for the most recent cases developed by ERAG MMWG. Other proposed new or modified generation and transmission facilities that may be under study are not represented. Due to the timing of the Class Year 2021 completion (first quarter of 2023) relative to the months-long process for developing this filing, the Class Year 2021 projects are not included in this year's FERC 715 filing. The near-term, mid-term and long-term cases would be appropriate for use as a starting point for transmission planning studies in those respective time frames. NYISO expects to use these base cases as a starting point for conducting various planning studies and transmission reliability assessments in 2023.

Each of these power flow cases contains a detailed representation of the NYS electric power system for the given time period, with appropriate reductions of the representations of the electric systems outside NYS. These cases are valid for the study of the NYS system only. Furthermore, these power flow cases, and their associated data are intended for power flow analysis only, and are not intended for use in stability, short-circuit, or other types of analyses.

The NYS system load model utilized in the peak load base cases is representative of a statewide coincident peak load for baseline load growth and weather conditions. Baseline peak weather conditions are 50/50 for all NYTO service areas except for Consolidated Edison Company of New York and Orange and Rockland Utilities which are 67/33. This value may be lower than the sum of the individual NYTOs' peak loads since these individual peak loads generally do not occur at the same time. The NYS system load model utilized in the spring light load base case represents a load level equal to approximately 45% of the statewide coincident summer peak load level. As in prior years, in addition to the summer peak baseline load cases, the NYISO includes two additional summer peak load cases based on a 90/10 statewide peak load forecast (referred to as Case#5 and Case#9 above). A 50/50 forecast means that, on a probability distribution curve, there is a 50% chance that the actual peak load will be below the forecast value, and a 50% chance of it being above the forecast. A 67/33 forecast means that there is a 67% chance that the actual peak load will be below the forecast value, and a 33% chance of it being above the forecast. A 90/10 forecast means that there is a 90% chance that the actual peak load will be below the forecast value, and a 10% chance of it being above

the forecast. NYISO uses both the baseline and 90/10 cases in various transmission planning analyses.

The cases are in the SAV data format of the Siemens - Power Technologies, Inc. ("PTI") Power System Simulator for Engineering ("PSS/E") power flow program. All twelve cases were created using PSS/E version 34.

The cases have been solved using the fixed-slope decoupled Newton iterative algorithm ("FDNS") with stepping transformer taps, area interchange and phase shifters engaged, switched shunts and DC line taps unlocked, and VAr limits applied immediately. An acceleration factor of 1.0 and a tolerance of 1.0 MW and MVAr were employed during the solution process. The zero-impedance line threshold was set at 0.0001 pu. The cases were developed on a Windows operating system.

The SAV files for all twelve base cases are provided in electronic files herewith. The size of the files is approximately 55 MB per case.

In addition to the above power flow base cases, a "data dictionary" is also provided in this filing. The data dictionary contains a listing of bus names and numbers from the Summer 2033 Peak Load case, with corresponding full names for each bus. This data dictionary applies to all twelve base cases.

The data dictionary also contains the Energy Information Administration (EIA) plant codes for generating plants represented in the cases, as appropriate.

The power flow base cases included in this filing are considered CEII and as such, access will be restricted to parties that obtain or have the proper authorization to receive them (see Appendix A).

Part 3: Transmitting Utility Maps and Diagrams

The maps and diagrams provided with this report are as follows:

Map Name	Latest Version (Date Originally Filed)
2023 NYISO Electric System Map	2023
NYISO One-Line Diagrams of the NYS Bulk Power System	2023
One-Line Diagrams of Each of the NYTO's systems:	
Central Hudson Gas & Electric Corporation	2023
Consolidated Edison Company of New York	2023
Long Island Power Authority	2023
New York Power Authority	2023
New York State Electric & Gas Corporation and Rochester Gas & Electric Corporation	2023
New York Transco, LLC	2023
Niagara Mohawk, A National Grid Company	2023
Orange & Rockland Utilities, Inc.	2023
Alcoa Power Generating Inc. Long Sault Division	2023
NextEra Energy Transmission New York, Inc.	2023
LS Power Grid New York Corporation I	2023

The 2023 NYISO Electric System Map depicts high voltage transmission facilities (115 kV and above) and major generation facilities within NYS.

The NYISO one-line diagram (4 pages) depicts the existing NYS bulk power system, which consists principally of relatively large generating units and the high voltage transmission system. Generally, bulk power system facilities are generating units that are 300 MW or larger and transmission facilities of 230 kV and above, although smaller generating units and lower voltage transmission on which faults or disturbances can have a significant effect on the continuity of service of the NYS system or can have a significant effect on areas outside of the NYS system, also are considered part of the bulk power system. An updated one-line diagram is provided with this report.

The NYTO one-line diagrams depict the respective existing transmission and generation facilities of the NYTOs' systems. In some cases, the NYTO one-line diagrams show more detail of the lower voltage transmission system than is shown in the NYISO diagram. The most recent versions of the NYTO diagrams are provided with this report.

The diagrams included in this filing will be restricted to parties that obtain or have authorization to obtain CEII from the NYISO (see Appendix A).

Part 4: Transmission Planning Reliability Criteria

This part includes a listing of transmission planning reliability criteria ("criteria") documents provided with this filing and previously filed criteria documents that are still in effect.

NYISO and the NYTOs are subject to the reliability standards established by NERC. The NERC Reliability Standards are available from the NERC web site at

(http://www.nerc.com/pa/Stand/Pages/ReliabilityStandards.aspx).

NYISO and the NYTOs also are subject to the NPCC Criteria and the NYSRC Reliability Rules. In addition, the NYTOs each have supplemental transmission planning reliability criteria as well. The applicable NPCC, NYSRC, and NYTOs criteria documents are listed as document #s 2-31 below.

The new, revised, or previously filed criteria documents that pertain to this filing are as follows:

1. Standard TPL-001-4 – Transmission System Planning Performance Requirements; North American Electric Reliability Corporation, effective date January 1, 2015. A copy of this document is included in this filing.
2. Standard FAC-010-3 – System Operating Limits Methodology for the Planning Horizon, effective date April 1, 2017. A copy of this document is included in this filing.
3. NPCC Regional Reliability Reference Directory #1 Design and Operation of the Bulk Power System (Directory #1); Northeast Power Coordinating Council, September 30, 2015. A copy of this document is included in this filing. The NPCC Directories are available from the NPCC web site at

   (https://www.npcc.org/content/docs/public/program-areas/standards-and-criteria/regional-criteria/directories/directory-01-design-and-operation-of-the-bulk-power-system.pdf).
4. NERC Regional Standard PRC-006-NPCC-2 Automatic Underfrequency Load Shedding; North American Electric Reliability Corporation, effective date April 1, 2020. A copy of this document is included in this filing.
5. NYSRC Reliability Rules & Compliance Manual for Planning and Operating the New York State Power System (Version 46); New York State Reliability Council, June 10, 2022 (filed 2023). The NYSRC Reliability Rules are available from the NYSRC web site at (https://www.nysrc.org/PDF/Reliability%20Rules%20Manuals/RRC%20Manual%20V46%20final.pdf). A copy of this revised document is included in this filing.
6. Central Hudson Gas & Electric Corporation Transmission Planning Guidelines; Central Hudson Gas & Electric Corporation, March 16, 2016 (filed 2016). This guideline is available from the Central Hudson Gas & Electric Corporation website at (https://www.cenhud.com/globalassets/pdf/ferc-open-access/chge---transmission_planning_guidelines.pdf). A copy of this document is included in this filing.
7. Central Hudson Gas & Electric Corporation (CHG&E) Interconnection Requirements Distributed Energy Resources Connected in Parallel with the Central Hudson Electrical Delivery System; Central Hudson Gas & Electric Corporation, December, 2019 (filed 2020). This guideline is available from the Central Hudson Gas & Electric Corporation website at (https://www.cenhud.com/globalassets/pdf/my-energy/dg/interconnection_guidelines_2019_12.pdf). A copy of this document is included in this filing.

8. Transmission Planning Criteria (TP-7100-19); Consolidated Edison Company of New York, November 2022 (filed 2023). A copy of this revised document is included in this filing.

9. Management of Merchant and Company Interconnection Projects (TP-7510-11); Consolidated Edison Company of New York, Inc., December, 2021 (filed 2022). A copy of this document is included in this filing.

10. Performance Requirements for Inverter-Based Generation (TP-8100-0); Consolidated Edison Company of New York, Inc., August, 2019 (filed 2020). A copy of this document is included in this filing.

11. Developer Welcome Kit; Consolidated Edison Company of New York, Inc., November, 2022 (filed 2023). A copy of this revised document is included in this filing.

12. Standard Engineering Design Guidelines for Area Substations, Transmission Substations and Purs Facilities (CE-ES-2002); Consolidated Edison Company of New York, Inc., May, 2022 (filed 2023). A copy of this revised document is included in this filing.

13. Transmission Planning Criteria; PSEG Long Island, December 28, 2022 (filed 2023). A copy of this revised document is included in this filing.

    The latest documents are available from the PSEG-Long Island web site at

    (https://www.psegliny.com/aboutpseglongisland/legalandregulatory).

14. Requirements for Generating Facility Interconnection to the LIPA Transmission System, PSEG Long Island, March 2018 (filed 2018). A copy of this document is included in this filing.

15. Bulk Electric System Facility and End User Interconnection Requirements to the LIPA Transmission System, PSEG Long Island, April 2017 (filed 2018). A copy of this document is included in this filing.

16. Smart Grid Small Generator Interconnection Procedures for New Distributed Generators Less than 10 MW Connected in Parallel with LIPA's Radial Distribution Systems, PSEG Long Island, Revised January 1, 2023 (filed 2023). A copy of this revised document is included in this filing.

17. Performance Requirements for Transmission-Connected Resources Using Non-Synchronous Generation, PSEG Long Island, April, 2021(filed 2022). A copy of this document is included in this filing.

18. Non-Synchronous Generation / HVDC / FACTs Interconnection Projects - Power System Studies for Considerations, PSEG Long Island, March 2018 (filed 2018). A copy of this document is included in this filing.

19. Design Criteria for Developer Connection to the New York Power Authority Transmission System, New York Power Authority, August 15,2022 (filed 2023). A copy of this revised document is included in this filing.

20. Avangrid Electric Transmission Planning Manual - Criteria & Processes NYSEG, RG&E, CMP, MEPCO and UI, November, 2022 (filed 2023). A copy of this revised document is included in this filing.

21. Requirements for Independent Power Producers of Electricity (BULLETIN 86-01); New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation, October 3, 2011 (filed 2016). A copy of this document is included in this filing.

22. Transmission Planning Guide (TGP28 – Issue 5); National Grid, January 27, 2020 (filed 2020) A copy of this document is included in this filing.

23. National Grid Electric System Bulletin No.756: Supplement to Specifications for Electrical Installations, Requirements for Parallel Generation Connected to a National Grid Owned EPS; National Grid, version 8.0, January, 2023 (filed 2023). A copy of this revised document is included in this filing.

24. Orange and Rockland Utilities, Inc. Transmission Design Standards (Revision 13); Orange and Rockland Utilities, Inc., July 31, 2022 (filed 2023). A copy of this revised document is included in this filing.

25. ORU-ENGR-004 - Revision 5: Management of Standard Large and Small Facility Interconnection Projects, Orange & Rockland Utilities, Inc., January 31, 2022 (filed 2022). A copy of this document is included in this filing.

26. ORU-ENGR-06A-001 Facility Interconnection Information Kit; Orange and Rockland Utilities, Inc., January 31, 2022 (filed 2022). A copy of this document is included in this filing.

27. ORU-ENGR-06B-001 Facility Interconnection Requirements; Orange and Rockland Utilities, Inc., January 31, 2022 (filed 2022). A copy of this document is included in this filing.

28. ORU-ENGR-008-000 Inverter-Based Resources Performance Requirements; Orange and Rockland Utilities, Inc., February 1, 2020 (filed 2020). A copy of this document is included in this filing.

29. New York Transco Guidelines for Third Party Interconnections, March 10, 2021 (filed 2021). A copy of this document is included in this filing.

30. New York Transco Transmission Planning Criteria, March 15,2023 (filed 2023). A copy of this revised document is included in this filing.

31. LS Power Grid New York Transmission Planning Criteria, June 30,2022 (filed 2023). A copy of this revised document is included in this filing.

Part 5: Transmission Planning Assessment Practices

This part includes a listing of transmission planning assessment practices ("practices") documents provided with this filing and previously filed practices documents that are still in effect. NYISO and the NYTOs have and use various documents (procedures, guidelines, *etc.)* that define or strongly relate to practices for assessment of the transmission system for planning purposes.

The new, revised, or previously filed practices documents that pertain to this filing are as follows:

1. NPCC *Guidelines for NPCC Area Transmission Reviews*. This document has been incorporated into NPCC Directory #1 as Appendix B (see Part 4, document #3). The NPCC Directory #1 is available from the NPCC website at: (https://www.npcc.org/content/docs/public/program-areas/standards-and-criteria/regional-criteria/directories/directory-01-design-and-operation-of-the-bulk-power-system.pdf).A copy of this document is included in this filing.

2. *NPCC Regional Reliability Reference Criteria A-10 Classification of Bulk Power System Elements*, Northeast Power Coordinating Council, March 27, 2020. A copy of this document is included in this filing. The NPCC criteria are available from the NPCC web site at:(https://www.npcc.org/content/docs/public/program-areas/standards-and-criteria/regional-criteria/criteria/a-10-20200508.pdf).

3. *New York ISO Comprehensive System Planning Process* (Attachment Y of the NYISO OATT), with the latest effective date of May 1, 2020. This document is available from the NYISO web site at: (https://www.nyiso.com/regulatory-viewer).

4. NYISO *Transmission Expansion and Interconnection Manual;* January 2023. A copy of this revised document is included in this filing.

   This manual is available from the NYISO web site at:

   (https://www.nyiso.com/documents/20142/2924447/tei_mnl.pdf/).

   Note that the *Transmission Expansion and Interconnection Manual* contains the following transmission planning guidelines:

   a. Attachment F: NYISO Transmission Planning Guideline #1-1, Guideline for System Reliability Impact Studies, Version 3.0, June 30, 2017;

   b. Attachment G: NYISO Transmission Planning Guideline #2-1, Guideline for Voltage Analysis and Determination of Voltage-Based Transfer Limits, Version 3.0, June 30, 2017;

   c. Attachment H: NYISO Transmission Planning Guideline #3-1, Guideline for Stability Analysis and Determination of Stability-Based Transfer Limits, Version 3.0, June 30, 2017;

   d. Attachment I: NYISO Transmission Planning Guideline #4-1, NYISO Guideline for Fault Current Assessment, Version 3.0, June 30, 2017;

   e. Attachment J: NYISO Transmission Planning Guideline #5-0, NYISO Guideline on Application of High-Speed Autoreclosing, Version 3.0, June 30, 2017.

5. NYISO *Reliability Planning Process Manual;* July 2022. A copy of this document is included in this filing. This document is available from the NYISO website at:

   (https://www.nyiso.com/documents/20142/2924447/rpp_mnl.pdf/).

6. NYISO *Operations* Manuals:

Operations manuals often describe operating rules and procedures that have a bearing on transmission planning studies in that these rules and procedures should be taken into consideration and modeled to the extent possible in performing analyses intended to simulate the operation and performance of the transmission system. For example, rules and procedures in areas such as voltage control and operation of phase angle regulators have significant relevance to transmission planning studies. NYISO operations manuals that have such significant relevance are as follows:

   a. NYISO *Transmission and Dispatching Operation Manual*; February 2023. A copy of this revised document is included in this filing. This document is available from the NYISO website at:

      (https://www.nyiso.com/documents/20142/2923301/trans_disp.pdf/).

   b. NYISO *Emergency Operations Manual*, March, 2023. A copy of this revised document is included in this filing. This document is available from the NYISO web site at:

      (https://www.nyiso.com/documents/20142/2923301/em_op_mnl.pdf/).

7. NYISO *Methodology for Determining System Operating Limits for the Planning Horizon*, April 1, 2017 A copy of this document is included in this filing.

8. *Voltage* Criteria *and Voltage Control on the Bulk Electric System (BES) (TP-7000-24);* Consolidated Edison Company of New York, Inc., October, 2021 (filed 2022). A copy of this document is included in this filing.

Part 6: Evaluation of Transmission System Performance

NYISO conducts studies to evaluate transmission system performance in two general time frames: the operating time frame (nominally out to a year), and the planning time frame (future years). The reports of both types of NYISO studies have been provided in previous FERC-715 filings.

In the operating time frame, NYISO completed two seasonal operating studies since the last FERC-715 filing, the Summer 2022 Operating Study, and the Winter 2022-2023 Operating Study. These studies assessed the transfer limits of the New York operating transmission interfaces for conditions expected to occur during the summer 2022 and winter 2022-2023 peak load periods, respectively. Copies of these study reports are included in this filing and are available from the NYISO web site at:

(https://www.nyiso.com/documents/20142/3691300/Summer2022-Operating-Study); and

(https://www.nyiso.com/documents/20142/3691300/Winter2022-23-Operating-Study).

In the planning time frame, the NYISO completed a 2022 Interim Area Transmission Review of the planned NYS bulk power transmission system in the study year 2027. As part of the NPCC reliability compliance and enforcement program, each NPCC Area (in this case, New York) is required to conduct an annual assessment of the reliability of its planned bulk power transmission system with respect to the NPCC Directory #1 (see Part 4), in accordance with the *Guidelines for NPCC Area Transmission Reviews* (Directory #1, Appendix B). Under this program, each Area is required to conduct a Comprehensive Review at least once every five years and either an Interim or Intermediate Review in the intervening years. A copy of the NYISO 2022 Interim Area Transmission Review Report is included in this filing.

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. 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 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")[3] due to various

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

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 system. A Short-Term Reliability Need that is observed within the first three years of the study period is deemed a "Near-Term Reliability Need."[4] Should a Near-Term Reliability Need be identified in a STAR, the NYISO solicits and selects the solution to address the need. If a need arises on bulk power transmission facilities beyond the first three years of the study period, the NYISO may choose to address the 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.

Since the 2022 FERC 715 filing, the NYISO has completed four STARs. Copies of these study reports are included in this filing and are available from the NYISO website at:

(https://www.nyiso.com/documents/20142/16004172/2022-Q1-STAR-Report-vFinal.pdf);
(https://www.nyiso.com/documents/20142/16004172/2022-Q2-STAR-Report-Final.pdf);
(https://www.nyiso.com/documents/20142/16004172/2022-Q3-STAR-Report-vFinal.pdf); and
(https://www.nyiso.com/documents/20142/16004172/2022-Q4-STAR-Report-vFinal.pdf).

Also in the planning timeframe, NYISO performs the Reliability Needs Assessment ("RNA") and develops a Comprehensive Reliability Plan ("CRP") on a biennial basis. Under this process, NYISO first evaluates and identifies the reliability needs of the NYS bulk power transmission facilities over a ten-year period, then solicits solutions and develops a plan for addressing any identified reliability needs. NYISO considers market-based and, if necessary, regulated solutions to reliability needs. NYISO considers all types of solutions, including generation, transmission, demand-side solutions, operating procedure changes, or any combination of these solution types when evaluating the potential solutions which are assessed in the CRP. A copy of the NYISO 2022 RNA report is included in this filing. The report is also available from the NYISO web site at:
(https://www.nyiso.com/documents/20142/2248793/2022-RNA-Report.pdf).

[4] 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.

Appendix A: Requesting NYISO FERC 715 Information

The NYISO 2023 "Annual Transmission Planning and Evaluation Report" and various documents included or referenced in the report and not considered to be CEII are available from the NYISO public web site at:

https://www.nyiso.com/ny-power-system-information-outlook

In order to obtain the information designated herein as CEII, a requestor must complete a NYISO CEII Request Form, instructions for which are available from the NYISO public web site at:

https://nyiso.tfaforms.net/187