Attachment II

UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

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New York Independent System Operator, Inc.

Docket No. ER24-1915-000 Docket No. ER24-1915-001 Docket No. ER24-1915-Docket No. ER24-342-000

AFFIDAVIT OF THINH T. NGUYEN

Mr. Thinh T. Nguyen declares:

1. I have personal knowledge of the facts and opinions herein and if called to testify could and would testify competently hereto.

A. Purpose of this Affidavit

 I submit this affidavit in support of the NYISO's further compliance filing in response to Order No. 2023. The purpose of this affidavit is to detail the steps the NYISO must perform in its Affected System Studies that require a study duration of up to 300 Calendar Days.

B. Background and Introduction

- My name is Thinh T. Nguyen. I am the Senior Manager of Interconnection Projects for the New York Independent System Operator ("NYISO"). My business address is 10 Krey Boulevard, Rensselaer, NY 12144.
- 4. I have held this position since March 2018. Prior to that, I was the Manager of Interconnection Projects for the NYISO since November 2015. I also have held other positions at the NYISO including Supervisor of System Modeling team, TCC Senior Market Operation Engineer, Senior Planning Engineer, and Planning Engineer since the inception of the NYISO in November 1999. Prior to the NYISO, I held a Planning Engineer position with the NYISO's predecessor, the New York Power Pool, for over a year and an Instruments and Controls Electrical Engineer position with Westinghouse Machinery Apparatus Operation for more than two years. I also received a Master of Engineering from the Rensselaer Polytechnic Institute, a Master of Business Administration from the College of St. Rose, and a Bachelor of Science in Electrical Power Engineering from the Rensselaer Polytechnic Institute.

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- 5. One of my primary responsibilities as the Senior Manager of Interconnection Projects at the NYISO is to ensure that the interconnection studies evaluate the reliability impacts on the New York State Transmission System of proposed interconnections of generation, load, or transmission facility development or expansion projects, including the impacts of projects interconnecting in neighboring regions. The NYISO evaluates proposed projects through various technical studies to analyze the project-specific impacts to the New York State Transmission System, to identify upgrades in order for the proposed projects to reliably interconnect to the transmission system, and to appropriately allocate the costs of upgrades to proposed projects based on their impact. Another of my responsibilities as the Senior Manager of Interconnection studies from start to finish, including Affected System Studies. I have direct knowledge of the time, effort, and costs it takes to complete the interconnection studies.
- 6. Based on this experience, I am aware of the efforts and time required to complete the interconnection studies to ensure reliability and to determine cost responsibility for projects seeking to connect to the New York State Transmission System and projects seeking to connect to neighboring regions with impacts on the New York State Transmission System.

C. NYISO's Affected System Study Process

- 7. The NYISO's new Cluster Study Process was filed in compliance with Order No. 2023 and was accepted by the Commission on April 17, 2025. The Cluster Study Process timeframe is generally consistent with the overall process timeframe established in Order No. 2023 and is substantially shorter than the duration for developers to complete than the NYISO's prior interconnection study process. The NYISO's proposed process and timeline for performing Affected System Studies was carefully developed to perform the required Affected System analysis within a tariff-prescribed timeframe, while minimizing disruption to a parallel, ongoing Cluster Study.
- The NYISO has two decades of experience in conducting Affected System Studies and in performing the system impact and facilities study elements of interconnection studies. Based on this experience, the 150 day Affected System Study timeframe established in Order No. 2023 for the *pro forma* rules does not align with the timeframe the NYISO

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requires to conduct such studies at the level required for the study results to function in the NYISO's unique process.

 An Affected System Study involves several key tasks that must be completed. Table 1 below details the key tasks the NYISO must complete before presenting the Affected System Study report to the Affected System Interconnection Customer.

Task No.	Task Description						
1	Obtain steady-state, short circuit, and stability models from the Affected System Interconnection Customer concerning its project interconnecting in the neighboring region (the "Affected System Project")						
2	Obtain the transmission network models of the neighboring system with and without the Affected System Project from the host system						
3	Create steady-state base case for the system condition without the Affected System Project modeled in the base case (pre-Affected System Project case), including creating auxiliary study files, if applicable						
4	Create steady-state base case for the system condition with the Affected System Project modeled in the base case (post-Affected System Project case) including creating auxiliary study files, if applicable						
5	Perform steady-state analysis (N-0, N-1, N-1-1, and N-1-1-0) and, if applicable, include PAR impact analysis, voltage deviation analysis, reactive power capability analysis, extreme contingency assessment, and/or, if applicable, Northeast Power Coordinating Council ("NPCC") A-10 testing ¹ and special studies (<i>e.g.</i> , electromagnetic transient analyses and subsynchronous resonance analyses) to determine whether the Affected System Project violates any Applicable Reliability Requirements						
6	If the Affected System Project violates any Applicable Reliability Requirements, identify potential Affected System Network Upgrade(s) and re-perform the steady- state analysis and other applicable analyses to confirm that identified Affected System Network Upgrade(s) can resolve the potential violations						
7	Create pre-Affected System Project transfer cases for thermal and voltage transfer limit analyses						
8	Create post-Affected System Project transfer cases for thermal and voltage transfer limit analyses						
9	Perform the pre-Affected System Project and post-Affected System Project thermal and voltage transfer limit analyses to determine whether the Affected System Project degrades thermal and voltage transfer limits.						
10	If the Affected System Project degrades thermal or voltage transfer limits, identify potential Affected System Network Upgrade(s) and re-perform the transfer limit analyses and other applicable analyses to confirm that identified Affected System						

Table	1:	Task	List	Table	for	Affected	System	Studies
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¹ NPCC Classification of Bulk Power System Elements (NPCC Document A-10) defines specific requirements applicable to design, operation, and protection of the Bulk Power System.

Task							
No.	Task Description						
	Network Upgrade(s) can resolve the potential transfer limit degradation due to the						
	Affected System Project						
11	Create short circuit base case for the system condition without the Affected System						
	Project modeled in the base case						
12	Create short circuit base case for the system condition with the Affected System						
	Project modeled in the base case						
13	Perform short circuit analyses to confirm that the Affected System Project does not						
	cause overdutied breakers						
14	If the Affected System Project causes overdutied breakers, identify potential						
	Affected System Network Upgrades and re-perform the short circuit analyses and						
	other applicable analyses to confirm that identified Affected System Network						
	Upgrade(s) can resolve the potential violations						
15	Create stability base case for the system condition without the Affected System						
	Project modeled in the base case including creating auxiliary study files, if						
	applicable						
16	Create stability base case for the system condition with the Affected System Project						
10	modeled in the base case including creating auxiliary study files, if applicable						
17	Perform stability analyses to confirm that the Affected System Project meets						
17	Applicable Reliability Requirements						
	If the Affected System Project causes the system to become unstable, identify						
18	potential Affected System Network Upgrade(s) and re-perform the stability						
	analyses and other applicable analyses to confirm that identified Affected System						
	Network Upgrade(s) can resolve the potential violations						
19	Analyze and identify the most appropriate Affected System Network Upgrade(s)						
	among the potential Affected System Network Upgrade(s) (<i>i.e.</i> , the least costly						
	physically feasible Affected System Network Upgrade(s) that can mitigate the						
	reliability violations consistent with Good Utility Practice)						
20	Perform the preliminary and engineering design of the selected Affected System						
	Network Upgrade(s)						
21	Develop the estimated cost and the estimated construction timeline for selected						
	Affected System Network Upgrade(s)						
22	Complete the draft Affected System Study report						
23	Present the draft Affected System Study report to the Affected System						
	Interconnection Customer						

10. Based on my extensive experience in conducting Affected System Studies and in performing the system impact and facilities study elements of other interconnection studies, it will reasonably require the NYISO, in coordination with applicable New York Transmission Owners, up to 300 Calendar Days to perform the above-described tasks for an Affected System Study that provides results concerning required upgrades and their costs estimates that are equivalent to the related results in its Cluster Study. The NYISO does not assess the reliability impact of these projects on the New York State

Transmission System differently than projects directly connecting to the New York State Transmission System. However, Affected System Network Upgrade(s) are more likely to be required for reliability violations triggered by Affected System Projects because Normal Operating Procedures that NYISO employs under its Minimum Interconnection Standard to avoid the need for upgrades (*e.g.*, re-dispatching generating facilities)² are less likely to be options to mitigate reliability violations triggered by facilities outside the New York Control Area.³

- 11. In particular, I estimate that the system impact study related elements of the Affected System Study detailed above to evaluate the impact of the Affected System Pproject on the New York State Transmission System and to identify any Affected System Network Upgrades will require up to 120 Calendar Days. During this time period, the NYISO will evaluate the cumulative thermal, voltage, short circuit and stability impacts of Affected System Projects on the New York State Transmission System, and the applicable Transmission Owner(s) will review the study results. This time period is consistent with the duration that the NYISO and Transmission Owners require to perform the same type of analysis in the NYISO's Cluster Study.
- 12. I further estimate that the facilities study related elements of the Affected System Study detailed above to determine the cost estimate and preliminary schedule for and to cost allocate any required Affected System Network Upgrades will require up to 180 Calendar Days. During this time period, the NYISO will evaluate which upgrade solutions could be a least cost feasible solution consistent with Good Utility Practice. The applicable Transmission Owner will then perform the preliminary engineering and design and develop and the estimated cost and construction timeline of the upgrade solution(s). This time period is consistent with the duration that the NYISO and Transmission Owners require to perform the same type of analysis in the Cluster Study.
- 13. This time period is required to ensure that the cost estimate for any Affected System Network Upgrades is sufficiently developed for the important role it plays in the NYISO's process. As with Cluster Study Projects participating in the Cluster Study, the Affected

² See NYISO Manual 23, Version 4.3: Transmission Expansion and Interconnection Manual, § 3.6, Appx. L (February 7, 2025), <u>https://www.nyiso.com/documents/20142/2924447/tei_manual.pdf/94a26e65-fd68-98e1-535b-fc41a9536607</u>.

³ The time required to identify and develop cost estimates for such upgrades is factored into the 300 Calendar Day timeline.

System Interconnection Customer must elect at the conclusion of the study whether to accept its cost allocation for any required Affected System Network Upgrades and to pay cash or post security for this amount to the applicable Transmission Owner. The Affected System Interconnection Customer is then only responsible for additional costs in excess of its secured amount under tariff-prescribed circumstances. In addition, these upgrades are then considered firm and included in the base case of subsequent interconnection studies. If the Affected System Interconnection Customer later withdraws, its security, which is based on the results of the Affected System Study, will be subject to forfeiture, so that the applicable Transmission Owner may construct any Affected System Network Upgrades that other Interconnection Customers are relying on. This approach eliminates the need for constant re-studies to address the impact of withdrawing projects and reduces cost uncertainty concerning required upgrades.

- 14. Finally, as the Affected System Study essentially has two separate components, an Affected System Interconnection Customer will know within 120 days whether its projects will have an impact in New York that requires upgrades and will have an initial identification of the required upgrades. The additional 180 days provides the Affected System Interconnection Customer with the cost estimates and a design and construction schedule.
- 15. If the NYISO were required to shorten the duration of the Affected System Study, then it will not be able to provide the same level of information to Affected System Interconnection Customers as to Cluster Study Projects and will have to consider whether a more limited study scope for the Affected System Study would necessitate re-studies or other process changes that could adversely impact Affected System Interconnection Customers. The additional time that would be required for such restudies would eliminate any benefits gained from shortening the Affected System Study and has the potential to result in an even longer process than a single 300 day study.
- 16. This concludes my affidavit.

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ATTESTATION

I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. I verify under penalty of perjury that the foregoing is true and correct.

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Thinh Nguyen June 13, 2025