Attachment VII

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc.	**)**	**Docket No. ER16-___-000**

AFFIDAVIT OF ZACHARY G. SMITH

Mr. Zachary G. Smith declares:

1. I have personal knowledge of the facts and opinions stated herein.

2. I serve as Director – Transmission Planning for the New York Independent System Operator, Inc. ("NYISO"). My business address is: 10 Krey Boulevard, Rensselaer, New York 12144.

3. I received my Bachelor of Science and Masters of Science in Electrical Engineering from Michigan Technological University. I joined the Transmission Planning department at the NYISO as an Engineer in 2004. In March 2009, I was promoted to Manager of Transmission Studies and to Director of Transmission Planning in July 2013. I serve as Chair of the Northeast Power Coordinating Council ("NPCC") Task Force on Coordination on Planning and as Chair of the ISO/RTO Council Planning Committee. I am a member of the Eastern Interconnection Planning Collaborative ("EIPC") Technical Committee and the Northeast Joint Interregional Planning Committee.

4. My current responsibilities at the NYISO include oversight and implementation of numerous transmission planning processes and initiatives for the New York State transmission system, including reliability transmission planning, public policy transmission planning, interregional transmission planning, and reliability compliance studies for the North American Electric Reliability Corporation ("NERC"), NPCC, and the New York State Reliability Council ("NYSRC"). As a part of my responsibility in maintaining reliability compliance, I oversee, among other things, the cost allocation methodology in the reliability planning process for regulated transmission solutions selected to resolve a Reliability Need on the New York State Transmission System.

5. In response to the Commission's April 21, 2016 order in Docket Nos. ER16-120-000 and EL15-37-001, which directed the NYISO to, among other things, remove a sunset date from its existing resource adequacy cost allocation methodology and stated that the NYISO could re-file other enhancements to its methodology for the reliability planning component of the NYISIO's Comprehensive System Planning Process ("Reliability Cost Allocation Methodology"), I participated in the preparation of the NYISO's June 20, 2016 filing pursuant to Section 205 of the Federal Power Act ("205 Filing").

6. Specifically, I participated in the development of the revisions to the Reliability Cost Allocation Methodology. The proposed revisions include: (a) removing the sunset provision of the existing Reliability Cost Allocation Methodology contained in Section 31.5.3.2.1.6 of the NYISO Open Access Transmission Tariff ("OATT"); (ii) adding a new step in the existing Reliability Cost Allocation Methodology to allocate the costs of a regulated transmission solution to Subzones that contribute to a Reliability Need related to transmission security issues; and (iii) revising Section 6.10 of the OATT ("Rate Schedule 10") to conform the cost recovery formulas to the revised methodology. The proposed revisions are nearly identical to those proposed in the NYISO's October 19, 2015 compliance filing in response to the Commission's February 19, 2015 order in Docket No. EL 15-37-000 with the exception of those parts that referred to the RMR process and the related allocation of costs of RMR agreements for local transmission security issues.

7. My work, and the work performed under my supervision and subject to my direction, contributed to the various components of the proposed revised Reliability Cost Allocation Methodology in this 205 filing and the October 19, 2015 RMR compliance filing.

8. As a part of my participation in revising the existing Reliability Cost Allocation Methodology, I made presentations at stakeholder meetings and led stakeholder discussions on the proposed revisions to the Reliability Cost Allocation Methodology in 2015 as a part of the RMR compliance filing and, again, in May 2016 in preparation of the current filing.

9. The NYISO and its stakeholders collaboratively developed the proposed tariff revisions at meetings of the Electric System Planning Working Group ("ESPWG") in February, March, and April 2015 and, again, in May 2016.

10. In response to stakeholder feedback at a meeting of the ESPWG on May 16, 2016, I reposted a Transmission Security Cost Allocation Presentation dated September 17, 2015, which contained an example of the proposed transmission security cost allocation steps. A copy of the presentation is attached to the NYISO's filing letter as Attachment VI and is posted on the NYISO's website.

11. A majority of the stakeholder Operating Committee approved the proposed tariff revisions by a show of hands vote on May 19, 2016, and a majority of the stakeholder Management Committee approved the proposed revisions by a show of hands vote on May 25, 2016.

12. On June 14, 2016, the NYISO's Board of Directors approved a motion directing the NYISO to file the proposed tariff revisions.

Existing Reliability Cost Allocation Methodology

13. The NYISO's existing Reliability Cost Allocation Methodology allocates to Load Serving Entities ("LSEs")[1] the costs of a regulated transmission solution to a Reliability Need on the New York State Bulk Power Transmission Facilities ("BPTFs") that arise from a resource adequacy issue.

14. The NYISO employs a "needs-based" methodology that allocates the cost of a regulated transmission solution to those LSEs in New York that contribute to the Reliability Need and primarily benefit from the solution to that need.

15. The existing Reliability Cost Allocation Methodology has a three-step approach that focuses on whether there is a locational, statewide, or a bounded region resource adequacy-related Reliability Need in order to allocate the costs of a solution to the appropriate LSEs. The NYISO performs this three-step process using the same system modeling that is used in identifying the Reliability Need necessitating the solution that will receive cost allocation.

16. Step one focuses on those areas within the New York Control Area ("NYCA") that have Locational Minimum Installed Capacity Requirements ("LCRs") (*i.e.*, allocation to LSEs in Load Zones G through K), which are referred herein as "LCR Zones." The costs of reliability upgrades in LCR Zones are allocated to LSEs in those Load Zones.

17. In step two, the NYISO runs its reliability simulation model with all internal transmission constraints relaxed to determine whether an unconstrained NYCA would have a Loss of Load Expectation ("LOLE") of less than 0.1 days per year. If not, the reliability upgrades necessary to meet the LOLE threshold are allocated to all Load Zones based on their coincident peak load contribution. LSEs in LCR Zones receive credit for meeting their LCRs under this calculation.

18. If the reliability simulation shows that there are still Reliability Needs, step three requires the NYISO to apply a binding interface test. This test identifies binding transmission constraints that prevent the deliverability of capacity throughout the NYCA and allocates the remaining costs to the LSEs within the constrained area, who benefit from the reliability solution.

19. As described in paragraphs 15-18 above, the resource adequacy-related methodology continues to be just and reasonable as it allocates the costs of solutions to the beneficiaries of those solutions. In this 205 Filing, the NYISO proposes to continue its Reliability Cost Allocation Methodology in Section 31.5.3 of the OATT without modification to the Commission-approved resource adequacy component. The methodology was previously accepted for filing by the Commission. However, under a

[1] Capitalized terms that are not otherwise defined in this affidavit shall have the meaning specified in Attachment Y of the NYISO OATT, and if not defined therein, in the NYISO OATT and the NYISO Market Administration and Control Area Services Tariff.

sunset provision contained in Section 31.5.3.2.1.6 of the OATT, the existing Reliability Cost Allocation Methodology was set to expire on December 31, 2105. For the NYISO to continue using this methodology, Section 31.5.3.2.1.6 requires the NYISO to file with the Commission to either continue applying or revise its existing methodology. The NYISO, through its stakeholder process (discussed above), reviewed its current cost allocation methodology and determined that it should continue to employ this methodology without expiration.

20. Accordingly, the NYISO requests that the removal of the sunset provision under Section 31.5.3.2.1.6 of the OATT be effective as of January 1, 2016 in order to prevent an interruption in the effectiveness of the resource adequacy component of the Reliability Cost Allocation Methodology.

21. Stakeholders have been on notice of the proposed change since, at least, October 19, 2015 when the NYISO filed with the Commission to remove the sunset provision as a part of the RMR compliance filing. As described above, stakeholders have accepted the continuation of the existing resource adequacy cost allocation methodology without objection.

22. There are currently no Developers eligible to allocate the costs of a regulated transmission solution in the reliability planning process. As a result, no Market Participants are believed to be prejudiced by making the removal of the sunset provision effective January 1, 2016.

Revised Reliability Cost Methodology with Transmission Security Step

23. The NYISO's existing methodology does not provide cost allocation to regulated transmission solutions that resolve a Reliability Need resulting from transmission security issues on the BPTFs. Under the existing Reliability Cost Allocation Methodology, such costs were deemed local issues without cost allocation under the OATT.

24. As part of its Order No. 1000 proceeding, the NYISO previously informed the Commission of this potential gap in its Reliability Cost Allocation Methodology and its intent to develop a new process step to address it. The NYISO indicated that it would work with its stakeholders to develop the transmission security step. In the meantime, the NYISO included a placeholder in OATT Section 31.5.3.2.1.4 indicating that it would take such action with stakeholders.

25. As proposed in this 205 Filing, the NYISO will continue to apply the existing methodology to allocate costs of a reliability transmission solution to a Reliability Need that arises from a resource adequacy issue. After allocating the costs of a solution to resolve the resource adequacy, the NYISO would perform additional steps to resolve the BPTF thermal transmission security and BPTF voltage security issues. The methodology would then allocate the costs of solutions associated with maintaining dynamic system stability on the BPTFs. Finally, solutions to exceeding fault current ratings of circuit breakers will be treated as a local matter without cost allocation through the NYISO's

tariff. The NYISO will proceed through this hierarchy until all of the costs of the solution have been addressed.

26. The NYISO developed this hierarchy to reflect the level of importance of the reliability issues underlying each of these steps in relation to maintaining system reliability. This method is consistent with traditional electric planning practice, which begins by providing for resource adequacy with the design and siting of supply resources to provide sufficient resources to service load. This is followed by providing that the transmission system can accommodate the delivery of power from these supply resources to loads without creating thermal overloads and ensuring that there is sufficient voltage and dynamic support for that delivery.

BPTF Transmission Security Cost Allocation Step

27. For the portion of a regulated transmission solution attributable to a BPTF thermal transmission security issue, the NYISO will allocate the cost of the solution to those Subzones that contribute to a thermal overload on the BPTFs based on the relative contribution of the Load in each Subzone to the transmission security issue as described below. The use of a Subzone evaluation methodology is consistent with the operation and market design of the NYISO's system and is the most granular level at which the NYISO's billing and settlement system can allocate the costs to LSEs that receive the benefit from the solution.

28. The methodology is illustrated in an example provided to stakeholders following the May 16, 2016 ESPWG meeting, which is included in Attachment VI to the NYISO's filing letter accompanying this affidavit. The NYISO will perform the BPTF thermal transmission security step using the same system modeling that is employed in identifying the Reliability Need necessitating the regulated transmission solution for which costs are being allocated.

29. The NYISO will first identify for each load bus in a Subzone a "nodal distribution factor" and "nodal megawatt flow." The "nodal distribution factor" represents the percentage of a Load that flows across the facility subject to the Reliability Need. The sign (positive or negative) of the nodal distribution factor represents the direction of the flow. The "nodal megawatt flow" represents the number of megawatts that flows across the facility subject to the Reliability Need due to the Load. It is calculated by multiplying the amount of Load in megawatts for the bus (the "Nodal Load") by the nodal distribution factor (positive or negative) for the bus.

30. Based on the calculation of the nodal megawatt flows and the nodal distribution factors for each affected load bus in a Subzone, the NYISO will identify which Loads contribute to the overloading of the facility and which help to resolve the overloading of the facility. The Nodal Load for a load bus with a positive nodal distribution factor contributes to the overloading facility and is referred to as a "contributing Load." The nodal megawatt flow for this Load is referred to as "contributing flow." The Nodal Load for a load bus with a negative nodal distribution factor helps to resolve the overloading of the facility

and is referred to as a "helping Load." The nodal megawatt flow for this Load is referred to as "helping flow."

31. The NYISO will then determine which of the contributing Loads and helping Loads have a material impact on the Reliability Need. To do this, the NYISO will first calculate the "contributing materiality threshold," which represents the percentage of all contributing Load that flows across the overloaded facility. This is calculated by dividing the sum of all contributing flow by the sum of all contributing Load. The NYISO will similarly calculate the "helping materiality threshold," which represents the percentage of all helping Load that flows across the overloaded element. This is calculated by dividing the sum of all helping flow by the sum of all helping Load. For each load bus, the nodal megawatt flow will be considered material if the nodal distribution factor is: (a) greater than or equal to the contributing materiality threshold, or (b) less than or equal to the helping materiality threshold.

32. The NYISO will then calculate the net material flow for each Subzone as the sum of the material Subzone contributing flow and material Subzone helping flow for that Subzone. Based on the net material flow, the NYISO will calculate the allocated flow for each Subzone. If the net material Subzone flow for a Subzone is positive, the allocated flow is equal to the net material Subzone flow. If the net material Subzone flow for a Subzone is negative or zero, the allocated flow for that Subzone is zero. Based on the net material flow, a Subzone that is contributing to the overload will be allocated costs for the solution to the Reliability Need, whereas a Subzone that is helping to alleviate the overload will not be allocated costs.

33. The NYISO will then check the reasonableness of the resulting allocation to verify that sufficient contributing flow is being allocated costs. If the total allocated flow is less than a majority of the total contributing flow, represented as 60%, then the contributing materiality threshold will be reduced until the total allocated flow is at least 60% of the total contributing flow.

34. Finally, the NYISO calculates the allocation percentage for each Subzone by dividing the total allocated flow for each Subzone by the total of all allocated flow in the NYCA.

35. If a single solution addresses multiple BPTF thermal transmission security issues, the NYISO will calculate weighting factors based on the ratio of the present value of the estimated costs for individual solutions to the costs of resolving each BPTF thermal transmission security issue. The NYISO will apply the weighting factors to the cost allocation calculated for each Subzone for each individual BPTF thermal transmission security issue.

36. In order to ensure that costs allocated to individual Subzones are commensurate with the benefit, the NYISO will exclude a Subzone from cost allocation if it does not exceed a *de minimis* impact threshold. If a Subzone is assigned a BPTF thermal transmission security cost allocation less than a *de minimis* dollar threshold, that Subzone will not be allocated costs. However, the total *de minimis* Subzones may not exceed 10% of the total BPTF

thermal transmission security cost allocation. If the total allocation percentage of all *de minimis* Subzones is greater than 10%, then the *de minimis* dollar threshold would be reduced until the total *de minimis* Subzones do not exceed 10% of the total BPTF thermal transmission security cost allocation. The *de minimis* threshold is initially $10,000.

BPTF Voltage Security Cost Allocation Step

37. If, after addressing any resource adequacy or BPTF thermal transmission security issues, there remains a BPTF voltage security issue, the NYISO will allocate the costs of addressing the voltage security issue on a Load-ratio share basis to each Subzone to which the substation subject to the violation is connected. This is determined based on the total peak Load for that Subzone.

38. The allocation of the costs of resolving these issues at the Subzone level, which is the lowest level of granularity at which the NYISO can allocate these costs, is reasonable as transmission system voltage issues are inherently more local in nature.

Dynamic Stability Cost Allocation Step

39. If, after completion of the resource adequacy, BPTF thermal security and BPTF voltage security steps, there remains a dynamic stability issue, the NYISO will allocate the costs of the portion of the solution attributable to resolving a dynamic stability issue to all Subzones in the NYCA on a Load-ratio share basis. This step in the hierarchy is necessary as a regulated transmission solution may be required to address a Reliability Need resulting from a dynamic stability issue.

40. Dynamic stability is a systemic issue that can lead to widespread cascading outages across the whole system. The NYISO proposes to allocate such costs to all Subzones in the NYCA, as a solution resolving a dynamic stability issue benefits all Subzones.

Short Circuit Issues

41. If, after the completion of all of the prior cost allocation steps in the methodology, there remains a short circuit issue, the short circuit issue will be deemed a local issue and the related costs will not be allocated under the OATT. The NYISO proposes to insert this final step, clarifying how a Reliability Need that results from a short circuit issue will be addressed, for completeness of the cost allocation process.

42. The NYISO's rationale is that short circuit issues, or fault current issues, are inherently local and driven primarily by local generators, transmission system configuration, and transmission system impedance. Regional load and power transfers do not contribute to fault current and, therefore, should not be allocated costs for Reliability Needs related to fault current.

Consistency of Revised Reliability Cost Allocation Methodology with Order No. 1000 Cost Allocation Principles

43. The revised Reliability Cost Allocation Methodology, as proposed in this 205 Filing, was developed to allocate the costs of reliability transmission solutions to Reliability Needs to LSEs within the NYCA based upon a "beneficiaries pay" approach and, therefore, constitutes a just and reasonable methodology.

44. The NYISO will allocate under each step in the methodology only that portion of the regulated transmission solution to a Reliability Need that is attributable to the specific reliability issue addressed by that step. Within each step of the methodology, the NYISO will only allocate the costs of the solution to those LSEs that contribute to creating the reliability issue and, likewise, benefit from the solution.

45. For the resource adequacy step, costs are appropriately allocated to LSEs at the Load Zone level for those Loads that gave rise to the need for additional resources and are benefitted accordingly. Resource adequacy is modeled based upon Load Zones, at the major interfaces, and resource adequacy Reliability Needs arise as LSEs obtain resources and serve customers within these zones, who benefit from those resources.

46. For the transmission security steps, the NYISO proposes to allocate costs to LSEs that contribute to such Reliability Needs at the Subzone level, as transmission security analysis uses nodal models that are sufficiently discrete to identify Subzonal contributions. The Subzone level is the lowest level of granularity at which the NYISO can allocate such costs under its billing and settlement software and procedures.

47. For the dynamic stability step, the NYISO proposes to allocate the costs to LSEs across the NYCA because a dynamic stability Reliability Need is a system-wide stability issue impacting all LSEs.

48. Under the resource adequacy, transmission security, and dynamic stability steps, the revised Reliability Cost Allocation Methodology does not allocate costs to customers that would receive no benefit from the transmission facilities being implemented.

49. The proposed revisions also seek to continue the NYISO's practice of administrating the Reliability Cost Allocation Methodology in a transparent manner. The revised tariff language in Section 31.5.3.2 of the OATT sets forth detailed descriptions of the proposed steps in the methodology, including the NYISO's process steps and formulas for administering them. As further discussed above, the NYISO has reviewed examples applying these formulas with stakeholders, which presentation material is available on the NYISO's website. Furthermore, the NYISO's practice is to present the results of its reliability cost allocation analysis to stakeholders and post them on its website.

50. The proposed revisions do not amend the NYISO's existing, Commission-accepted, approach of using different cost allocation methodologies for its reliability planning process Section 31.5.3 of the OATT), economic planning process (Section 31.5.4 of the OATT), and Public Policy Transmission Planning Process (Section 31.5.5 of the OATT).

51. This concludes my affidavit.

ATTESTATION

I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. The facts are set forth therein are true to the best of my knowledge, information, and belief.

Zachary G. Smith

Subscribed and sworn to before me
this 20th day of June 2016

Notary Public

My commission expires: 02/12/2018

CARL F. PATKA
Notary Public - State of New York
No. 4962209
Qualified in Albany County
My Commission Expires Feb. 12, 2018