40.12 Cluster Baseline Assessment and Cluster Project Assessment

40.12.1 Cluster Baseline Assessment (CBA) for Cost Allocation Between Interconnection Customers and Connecting Transmission Owners

The cost of System Upgrade Facilities is first allocated between Interconnection Customers and Connecting Transmission Owners in accordance with the rules that are discussed below in this Section 40.12.1. For purposes of this 40.12.1, the requirements applicable to Connecting Transmission Owner also apply to Affected Transmission Owner or Affected System Operator.

40.12.1.1 The cost of System Upgrade Facilities is allocated between Interconnection Customers and Connecting Transmission Owners based upon the results of a Cluster Baseline Assessment of the five-year need for System Upgrade Facilities. The Cluster Baseline Assessment, as described in these rules, will be conducted by the ISO in cooperation with Market Participants. No Market Participant will have decisional control over any determinative aspect of the Cluster Baseline Assessment. The ISO will have decisional control over the entire Cluster Baseline Assessment. If, at any time, the ISO decides that it needs specific expert services from entities such as Market Participants, consultants or engineering firms for it to conduct the Cluster Baseline Assessment, then the ISO will enter into appropriate contracts with such entities for such input. As it conducts each Cluster Baseline Assessment, the ISO will provide regularly scheduled status reports and working drafts, with supporting data, to the ISO Operating Committee to ensure that all affected Market Participants have an opportunity to contribute whatever information and input they believe might be helpful to the process. Each completed Cluster Baseline Assessment will be

reviewed and approved by the ISO Operating Committee as part of the Cluster Study Report in accordance with 40.11.7. Each Cluster Baseline Assessment is reviewable by the ISO Board of Directors in accordance with provisions of the Commission-approved ISO Agreement.

40.12.1.1.1 The purpose of the Cluster Baseline Assessment is to identify the System Upgrade Facilities that Transmission Owners are expected to need during the five-year period covered by the assessment to reliably meet the load growth and changes in the load pattern projected for the New York Control Area, with cost estimates for the System Upgrade Facilities.

40.12.1.2 Procedure for Cluster Baseline Assessment

The Cluster Baseline Assessment procedure used to identify the System Upgrade Facilities that will ensure that New York State Transmission System facilities are sufficient to reliably serve existing load and meet load growth and changes in load patterns in compliance with NYSRC Reliability Rules, NPCC Basic Design and Operating Criteria, NERC Planning Standards, ISO rules, practices and procedures, and the applicable Transmission Owner criteria included in FERC Form No. 715 (collectively "Applicable Reliability Requirements"). In order for the ISO to recognize any revisions to Transmission Owner criteria as Applicable Reliability Requirements under this Attachment HH, the Transmission Owner shall present proposed revisions to such criteria to the ISO Operating Committee or one of its subcommittees. To the extent such revised criteria are not inconsistent with Order No. 2003 or the ISO's interconnection procedures set forth in this Attachment HH to the OATT, the ISO will accept such revised criteria. The procedure will use the Applicable Reliability Requirements in effect when the Cluster Baseline Assessment is commenced. The procedure will be:

40.12.1.2.1 The ISO will first develop the Existing System Representation.

40.12.1.2.2 The ISO will then utilize the Existing System Representation to develop existing system improvement plans with each Transmission Owner. These improvement plans will use ISO data from the annual NYISO Load and Capacity Data Report to project system load growth and changes in load patterns, including those that reflect demand side management, and will identify the System Upgrade Facilities needed year-by-year for the existing system to reliably serve projected load in the Transmission Owner's Transmission District for a five-year period. The ISO will integrate these existing system improvement plans into the Cluster Baseline Assessment to ensure that the System Upgrade Facilities needed for a five-year period are identified on a New York State Transmission System-wide basis. The Cluster Baseline Assessment will identify each anticipated System Upgrade Facility project, its estimated cost, its anticipated in-service date, and the status of the project (in construction, budget approval received, budget approval pending).

40.12.1.2.3 The ISO will identify in the Cluster Baseline Assessment the System Upgrade Facilities needed to reliably meet projected load growth and changes in load pattern without the interconnection of any proposed Cluster Study Projects, except for those proposed Projects included in the Existing System Representation pursuant to Section 40.10.3.

40.12.1.2.4 The ISO will perform thermal, voltage, and stability analyses, as appropriate, to determine the normal and emergency transfer capabilities of the statewide existing system.

40.12.1.2.5 The ISO will rely on the most recent resource reliability analysis of the existing system. If no Reliability Needs are required under the study assumptions used in the most recent resource reliability analysis, the existing system will be deemed to meet Applicable Reliability Requirements for purposes of the Cluster Study.

40.12.1.2.6 If the transmission and generation facilities included in the Existing System Representation, combined with previously approved and accepted System Upgrade Facilities, are insufficient to meet Applicable Reliability Requirements on a year by year basis, then the ISO will develop feasible generic solutions that satisfy the Applicable Reliability Requirements, in accordance with Section 40.12.1.3, below.

40.12.1.2.7 If the existing system meets Applicable Reliability Requirements, the ISO will perform short-circuit analysis to determine whether there is sufficient interrupting capability in the existing system. If there are any breaker overloads, the ISO will determine the System Upgrade Facilities needed to mitigate the short circuit overloads.

40.12.1.2.8 A reassessment of Sections 40.12.1.2.4 through 40.12.1.2.6 shall be reassessed and, to the extent required by Good Utility Practice, repeated if the improvement plan impacts the transmission transfer capability of the system. The results of the short-circuit analysis will be treated in the same manner as the results of thermal, voltage and stability analyses for all purposes under these cost allocation rules.

40.12.1.2.9 Each Cluster Baseline Assessment conducted by the ISO will be reviewed and approved by the ISO Operating Committee, and its effectiveness will be subject to the approval of the ISO Operating Committee. In its report to the ISO Operating Committee, the ISO shall explain its reasons for all of its recommendations.

40.12.1.2.10 Each most recently completed Cluster Baseline Assessment will be reviewed during the next Cluster Study Process by the ISO and updated, as necessary, following the criteria and procedures described herein.

40.12.1.3 In developing solutions as required by Section 40.12.1.3.6, the ISO will, as it develops its own generic solutions, also utilize the following procedures:

40.12.1.3.1 The ISO will first select as generic solutions proposed Cluster Study Projects sufficient to meet Applicable Reliability Requirements on a year by year basis. If a proposed Cluster Study Project is larger than necessary, the ISO shall select that portion or segment of the project that is sufficient to meet but not exceed Applicable Reliability Requirements. If the proposed Cluster Study Project is not capable of being segmented or if the Cluster Study Project cannot meet Applicable Reliability Requirements on a year by year basis, the ISO shall not select it.

40.12.1.3.2 If the generation and transmission facilities included in the Existing System Representation, together with any proposed Cluster Study Projects that qualify as solutions pursuant to Section 40.12.1.3.1, above, are not sufficient to meet Applicable Reliability Requirements, the ISO shall complete the development of its own generic solutions, taking into account any generic

solutions proposed pursuant to Section 40.12.1.3.3, below, for inclusion in the CBA.

40.12.1.3.3 Market Participants may also propose generic solutions for inclusion in the CBA. The Market Participant proposing such solutions shall provide the ISO with all data necessary for the ISO to determine the feasibility of such proposed generic solutions.

40.12.1.3.4 The ISO shall develop and consider alternative sets of proposed generic solutions that fairly represent the range of feasible solutions to Applicable Reliability Requirements.

40.12.1.3.5 The ISO shall determine the feasibility of additional generic solutions developed pursuant to Sections 40.12.1.3.2, 40.12.1.3.3, and 40.12.1.3.4, according to the following criteria:

40.12.1.3.5.1 The ISO shall select only solutions that are based on proven technologies that have actually been licensed and financed, are under construction or have already been built in similar locations.

40.12.1.3.5.2 The ISO shall select as additional generic solutions only facilities that can reasonably be placed in service in time to meet Applicable Reliability Requirements on a year by year basis. In making this determination, the ISO shall consider the size and type of facility, access to fuel, access to transmission facilities, transmission upgrade requirements, construction time, and Good Utility Practice.

40.12.1.3.6 The ISO will submit its proposed generic solutions and the alternatives that it considered to Market Participants and to an independent expert for review

and will make the results of the expert's review available to Market Participants. The independent expert shall review the feasibility of the proposed generic solutions developed pursuant to Sections 40.12.1.3.2, 40.12.1.3.3, and 40.12.1.3.4, and of generic solutions based on the segmentation of any Cluster Study Project under Section 40.12.1.3.1, according to the criteria set forth in Section 40.12.1.3.5.

40.12.1.3.6.1 If the independent expert concludes that one or more generic solutions is not feasible, the ISO shall eliminate that solution from further review.

40.12.1.3.6.2 If the ISO does not adopt the expert's recommendations, it will state in its report to the ISO Operating Committee its reasons for not adopting those recommendations.

40.12.1.3.7 Subject to Section 4.12.1.3.7.1, below, in the event that more than one generic solution or set of solutions satisfies the feasibility requirement of Section 40.12.1.3.5 and 40.12.1.3.6, the ISO shall compare the System Upgrade Facilities that would be necessary to interconnect each such generic solution and shall adopt the solution that is most consistent with Good Utility Practice. For these purposes, in comparing alternative solutions, a generic solution that satisfies sub-load pocket deficiencies shall normally be selected first.

40.12.1.3.7.1 The ISO shall be responsible for determining whether any generic solution or proposed Cluster Study Project meets Applicable Reliability Requirements.

40.12.1.4 With the exception of those upgrades that were previously allocated to, and accepted by Cluster Study Projects as a part of the Cluster Project Assessment in the Final Decision Round of previous Class Years or Cluster Studies, Interconnection Customers are not responsible for the cost of any System Upgrade Facilities that are identified in the Cluster Baseline Assessment, or any System Upgrade Facilities that resolve in whole or in part a deficiency in the system identified in the Cluster Baseline Assessment.

40.12.1.5 Interconnection Customers are responsible for 100% of the cost of the System Upgrade Facilities that are not already identified in the Cluster Baseline Assessment and are required for their Projects to reliably interconnect to the transmission system in a manner that meets the NYISO Minimum Interconnection Standard. The System Upgrade Facilities necessary to accommodate Cluster Study Projects will be determined by the Phase 1 Study and the Cluster Project Assessment. The criteria and procedures that will be followed to conduct the Cluster Project Assessment are discussed in Section 40.12.2 below.

40.12.1.5.1 If a Connecting Transmission Owner, Affected Transmission Owner, Affected System Operator, or Interconnection Customer elects to construct System Upgrade Facilities that are larger or more extensive than the minimum facilities required to reliably interconnect the proposed Cluster Study Project, and are reasonably related to the interconnection of the proposed project, then the entity that make such election is responsible for the cost of those System Upgrade Facilities in excess of the minimum System Upgrade Facilities required by the Cluster Study Project. If there is Headroom associated with these larger System

Upgrade Facilities and an Interconnection Customer of any subsequent project interconnects and uses the Headroom within ten (10) years of its creation, such subsequent Interconnection Customer shall pay the Connecting Transmission Owner, Affected Transmission Owner, Affected System Operator, or the Interconnection Customer for this Headroom in accordance with these rules, including Section 40.17.

40.12.1.6 The System Upgrade Facilities cost for which an Interconnection Customer is responsible will be determined on a "net" basis; that is, the Interconnection Customer's System Upgrade Facilities cost will be determined net of the benefits, or System Upgrade Facility cost reductions, that result from the construction and operation of its project and the related upgrades. The net cost responsibility of an Interconnection Customer will not be less than zero. Also, the cost responsibility of the Connecting Transmission Owner for System Upgrade Facilities will be no greater than it would have been without the Interconnection Customer's project. Specifically, the Connecting Transmission Owner shall not be required to pay (in total) more than 100% of the cost of installing a specific piece of equipment.

40.12.1.6.1 The purpose of this approach is to allocate to the Interconnection Customer the responsibility for the cost of the net impact of its project on the needs of the New York State Transmission System for System Upgrade Facilities. Thus, an Interconnection Customer is responsible for the cost of the System Upgrade Facilities that are required by, or caused by, its project. An Interconnection Customer is not responsible for the cost of System Upgrade

Facilities that would be required anyway, without the construction of its project. If an Interconnection Customer's project reduces the cost of System Upgrade Facilities that would be required anyway, that beneficial cost reducing impact will be recognized.

40.12.1.6.2 The net System Upgrade Facilities cost and cost reduction benefits of an Interconnection Customer's project are determined by the ISO by comparing and netting the results of a Cluster Baseline Assessment with the corresponding Cluster Project Assessment in accordance with these rules.

40.12.1.6.3 The net System Upgrade Facilities cost and cost reduction benefits of an Interconnection Customer's project are comprised of those costs and cost reduction benefits caused by (1) the construction of System Upgrade Facilities not contained in the Cluster Baseline Assessment, and (2) eliminating or reducing the need for the construction of System Upgrade Facilities contained in the Cluster Baseline Assessment, due to the construction of System Upgrade Facilities associated with the proposed project.

40.12.1.6.4 The Interconnection Customer's net cost responsibility will be determined using constant dollars. That is, when netting the cost of System Upgrade Facilities required for its project, as identified in the Cluster Project Assessment, with those identified in the Cluster Baseline Assessment, the cost of System Upgrade Facilities in the out-years of the Cluster Baseline Assessment and the out-years of the Cluster Project Assessment will be discounted to a current year value for netting. The cost of out-year System Upgrade Facilities will be

discounted to a current value using the weighted average cost of capital of the Connecting Transmission Owner.

40.12.2 Cluster Project Assessment (CPA) for Cost Allocation Among Interconnection Customers

The Interconnection Customer's share of the cost of System Upgrade Facilities is allocated among Interconnection Customers based upon the ISO Cluster Project Assessment. The Cluster Project Assessment will be conducted by the ISO to ensure New York State Transmission System compliance with Applicable Reliability Requirements. The ISO will conduct the Cluster Project Assessment, as described in these rules, in cooperation with Market Participants. No Market Participant will have decisional control over any determinative aspect of the Cluster Project Assessment. The ISO will have decisional control over the entire Cluster Project Assessment. If, at any time, the ISO decides that it needs specific expert services from entities such as Market Participants, consultants or engineering firms for it to conduct the Cluster Project Assessment, then the ISO will enter into appropriate contracts with such entities for such input. As it conducts each Cluster Project Assessment, the ISO will provide regularly scheduled status reports and working drafts, with supporting data, to the Operating Committee to ensure that all affected Market Participants have an opportunity to contribute whatever information and input they believe might be helpful to the process. Each completed Cluster Project Assessment will be reviewed and approved by the Operating Committee as part of the Cluster Study Report in accordance with Section 40.11.7. Each Cluster Project Assessment is reviewable by the ISO Board of Directors in accordance with the provisions of the Commission-approved ISO Agreement.

40.12.2.1 The Cluster Project Assessment for each Cluster Study will identify the System Upgrade Facilities required for all Cluster Study Projects, with cost

estimates for the System Upgrade Facilities. The System Upgrade Facilities identified through the Cluster Project Assessment will only be those System Upgrade Facilities that are not already included in a Cluster Baseline Assessment. If a Distribution Upgrade is identified in the Cluster Project Assessment, the ISO shall apply the same requirements applicable to System Upgrade Facilities in this Section 40.12.2 to the Distribution Upgrade.

40.12.2.2 For each Cluster Project Assessment, the ISO will utilize the Existing System Representation used for the corresponding Cluster Baseline Assessment.

40.12.2.3 In the case of a new System Upgrade Facility that has a functional capacity not readily measured in amperes or other discrete electrical units, such as a System Upgrade Facility dedicated to system protection, the *pro rata* impact of each project in the Cluster Study on the reliability of the transmission system will be based upon the number of Projects in the Cluster Study contributing to the need for the new System Upgrade Facility. The *pro rata* impact of each project in the Cluster Study needing such a new System Upgrade Facility will be equal. Accordingly, the *pro rata* contribution of each of the Projects to the need for the new System Upgrade Facility will be equal to (1/a), where "a" is the total number of Projects in the Cluster needing the new System Upgrade Facility.

40.12.2.4 In the case of a new System Upgrade Facility that has a capacity readily measured in amperes or other discrete electrical units, the impact of each project in the Cluster Study will be stated in terms of its *pro rata* contribution to the total electrical impact on each individual System Upgrade Facility in the Cluster Study of all Projects that have at least a *de minimus* impact, as described in Section

40.12.2.5 of these rules. The contribution to electrical impact will be measured in various ways depending on the nature of the transmission problem primarily causing the need for the individual System Upgrade Facility.

40.12.2.4.1 Contribution to short-circuit current for interrupting duty beyond the rating of equipment.

40.12.2.4.2 Contribution to MW loading on the critical element for thermal overloads under the test conditions that cause the need for a System Upgrade Facility. MW contribution will be calculated by multiplying the associated distribution factor by the declared maximum MW of the project. The distribution factor is calculated by *pro rata* displacement of New York System load by the added generation.

40.12.2.4.3 Contribution to voltage drop on the most critical bus for voltage problems. A critical bus will be defined as representative for voltage conditions during a specific contingency. The *pro rata* impact of each project is measured as the ratio of the voltage drop at the critical bus caused by the project when none of the other Projects are represented, to the voltage drop at the critical bus when all of the Projects in the Cluster Study are represented.

40.12.2.4.4 Contribution to transient stability problems as measured by the fault current calculated for the most critical stability test that is causing the need for the System Upgrade Facility.

40.12.2.5 For each individual electrical impact standard listed in subsections 40.12.2.5.1.1 through 40.12.2.5.1.4 below, an Interconnection Customer will not be responsible for the cost associated with a corresponding System Upgrade Facility if its project's contribution is less than the *de minimus* impacts defined

below. The costs of Projects that would otherwise have been allocated to certain Interconnection Customers' Projects but for the sub-*de minimus* impact exemption, shall be allocated 100 %to the other Interconnection Customers in the Class Year according to their *pro rata* contribution.

40.12.2.5.1 *De minimus* impact is defined in terms of any one of the factors listed below in this subsection. Examples of computations used to determine *de minimus* impact are shown in ISO Procedures.

40.12.2.5.1.1 **Short Circuit Contribution**: Equal to or greater than 100 amperes of the existing rating of the equipment that needs to be replaced.

40.12.2.5.1.2 **Thermal Loadings**: Equal to or greater than 10 MW on the most limiting monitored element under the most critical contingency that is causing the need for transmission improvements.

40.12.2.5.1.3 **Voltage Effects**: Equal to or greater than 2% of the voltage drop occurring with all Cluster Study Projects at the most critical bus.

40.12.2.5.1.4 **Stability Effects**: Equal to or greater than 100 amperes of the fault current for the most critical stability test that is causing the need for the System Upgrade Facility.

40.12.2.6 The *pro rata* contribution of each project in the Cluster Study to each of the System Upgrade Facilities identified in the Cluster Project Assessment shall be determined as follows.

40.12.2.6.1 First, in accordance with Section 40.12.1.6 of these rules, the total cost of System Upgrade Facilities identified in the Cluster Project Assessment is compared and netted with the total cost of System Upgrade Facilities identified in

the Cluster Baseline Assessment. If the total cost of System Upgrade Facilities identified in the Cluster Project Assessment does not exceed the total cost of System Upgrade Facilities identified in the Cluster Baseline Assessment, then there is no cost to be allocated among Cluster Study Projects.

40.12.2.6.2 If the total cost of System Upgrade Facilities identified in the Cluster Project Assessment does exceed the total cost of System Upgrade Facilities identified in the Cluster Baseline Assessment by some amount, then this amount ("Overage Cost") is a cost to be allocated among Cluster Study Projects. Appendix 9 to this Attachment HH sets out an example of an allocation of Overage Cost among Cluster Study Projects.

40.12.2.6.3 The Overage Cost represents a percentage of the total cost of System Upgrade Facilities identified in the Cluster Project Assessment ("Overage Cost Percentage").

40.12.2.6.4 Each System Upgrade Facility identified in the Cluster Project Assessment has a cost specified for it in the Cluster Project Assessment.

40.12.2.6.5 The *pro rata* contribution of each project in the Cluster Study to a System Upgrade Facility identified in the Cluster Project Assessment represents a percentage contribution to the need for that System Upgrade Facility ("Contribution Percentage").

40.12.2.6.6 An individual Cluster Study Project's *pro rata* responsibility for the cost of each System Upgrade Facility identified in the Cluster Project Assessment is the product of (a) the Overage Cost Percentage; (b) the Cluster Study Project's Contribution Percentage for the particular System Upgrade Facility; and (c) the

cost of the particular System Upgrade Facility as specified in the Cluster Project Assessment.

40.12.2.6.7 If the least cost solution identified is to install one System Upgrade Facility (*e.g.*, a series reactor) rather than replacing a number of System Upgrade Facilities (*e.g.*, breakers), the ISO staff will determine each Cluster Study Project's Contribution Percentage by calculating what each Cluster Study Project's *pro rata* contribution would have been on the System Upgrade Facilities not replaced (*e.g.*, breakers) and applying that percentage to the System Upgrade Facility that is installed (*e.g.*, series reactor).

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