

## **40.10 Phase 1 Study Process, Development of System Models, and Phase 2 Entry Decision Period**

### **40.10.1 Phase 1 Study Process Start Date and Duration**

40.10.1.1 The Phase 1 Study process for the Cluster Study Process shall commence on the first Business Day after the end date of the Phase 1 Entry Decision Period.

40.10.1.2 The scheduled duration of the Phase 1 Study process shall be set forth in Section 40.9.2.

40.10.1.3 The Phase 1 Study process period shall conclude with the ISO's Operating Committee's approval of the Phase 1 Cost Estimates Summary Report.

### **40.10.2 ISO Development Work for Cluster Study Existing System Representation and Base Cases**

40.10.2.1.1 The ISO will develop the Existing System Representation in accordance with the requirements in Section 40.10.3. The Existing System Representation is the foundation of the CBA and CPA base cases. The ISO shall develop the Existing System Representation and auxiliary files for a given Cluster Study during the Application Window and Customer Engagement Window for that Cluster Study Process. The Existing System Representation will be completed for a given Cluster Study after the conclusion of the Final Decision Period for the prior Class Year Study or Cluster Study and prior to the commencement of the Phase 1 Study for the ongoing Cluster Study Process.

40.10.2.1.2 Using the Existing System Representation, the ISO will develop the CBA in accordance with the requirements in Section 40.12.1. The CBA evaluates the pre-existing baseline system before the Cluster Study Projects are included and identifies any System Upgrade Facilities and associated cost estimates for the baseline system. The CBA is used to determine the cost allocation of required facilities between Transmission Owners and Cluster

Study Projects. The ISO will commence the development of the CBA base cases (*e.g.*, short-circuit, steady state) for a given Cluster Study during the Application Window and/or the Customer Engagement Window for that Cluster Study Process. The ISO will be responsible for developing and completing each CBA base case. The ISO shall provide Transmission Owners at least five (5) Business Days to review and provide comments on the draft of each CBA base case and at least five (5) Business Days to review and provide comments on any updates the ISO makes to the draft base case to address the Transmission Owner's comments.

40.10.2.1.3 The ISO will develop the CPA in accordance with the requirements in Section 40.12.2. The CPA evaluates the condition of the system with the Cluster Study Projects added to the baseline system, identifies the System Upgrade Facilities required for the Cluster Study Projects collectively, and then performs a design, preliminary engineering, and estimation of costs and time to construct for each System Upgrade Facility. The CPA determines the cost allocation of required facilities among the Cluster Study Projects. The ISO will commence the development of the CPA base cases for a given Cluster Study during the Customer Engagement Window. The ISO will be responsible for developing and completing each CPA base case. The ISO shall provide Transmission Owners at least 5 Business Days to review and provide comments on the draft of each CBA base case and at least 5 Business Days to review and provide comments on any updates the ISO makes to the draft base case to address the Transmission Owner's comments.

### **40.10.3 Existing System Representation**

40.10.3.1 The ISO shall include in the Existing System Representation for purposes of the CBA and CPA for a given Cluster Study or Expedited Deliverability Study:

(i) the following facilities included in the ISO's most recent NYISO Load and Capacity Data Report: all generation identified as existing and all transmission facilities identified as existing and/or firm, excluding those facilities that are subject, as applicable, to Class Year Study or Cluster Study cost allocation but for which Class Year Study or Cluster Study cost allocations have not been accepted or for which cash or Security for the allocated amount has not been provided;

(ii) all proposed Projects, together with their associated System Upgrade Facilities and System Deliverability Upgrades, as applicable, that have accepted their cost allocation and paid cash or posted Security for their allocated amount in a prior Class Year Study or Cluster Study cost allocation process or for their facilities study in accordance with the Small Generator Interconnection Procedures in Attachment Z; *provided, however*, that System Deliverability Upgrades where construction has been deferred pursuant to Section 40.13.12.3.1 will only be included if construction of the System Deliverability Upgrades has been triggered under Section 40.13.12.3.1;

(iii) all Affected System Network Upgrades for which the Affected System Interconnection Customer has accepted its cost allocation and paid cash or posted Security in accordance with Section 40.8.3.10;

(iv) all proposed generators that interconnect to the distribution system through studies conducted outside of the NYISO's interconnection procedures (*e.g.*, the New York State Standardized Interconnection Requirements ("NYSSIR") process or a utility's individual interconnection procedures) and have been identified as firm in accordance with ISO Procedures;

(v) all generation and transmission retirements and derates identified in the NYISO Load and Capacity Data Report as scheduled to occur during the five-year cost allocation study planning period;

(vi) Transmission Projects that are proposed under Attachments Y or FF of the ISO OATT and have met the following milestones prior to the start date of the Customer Engagement Window for that Cluster Study Process: (1) have been triggered under the Reliability Planning Process, selected under the Short-Term Reliability Process, selected under the Public Policy Transmission Planning Process, or approved by beneficiaries under the Economic Planning Process, (2) have, if applicable, a completed System Impact Study in accordance with Attachment P to the ISO OATT, and (3) are making reasonable progress under the applicable OATT Attachments Y or FF planning process;

(vii) Transmission Projects that are not proposed under Attachments Y or FF to the ISO OATT that have completed a Facilities Study and posted Security for Network Upgrade Facilities as required in Section 22.11.1 of Attachment P to the ISO OATT (if applicable);

(viii) transmission projects that are not subject to the Transmission Interconnection Procedures, the Standard Large Facility Interconnection Procedures, or the Standard Interconnection Procedures (*i.e.*, new transmission facilities or upgrades proposed by a Transmission Owner in its Local Transmission Owner Plan or NYPA transmission plan) identified as “firm” by the Connecting Transmission Owner before the start date of the Customer Engagement Window for the Cluster Study Process and either (1) have commenced a Facilities Study in accordance with Section 3.7 of the OATT (if applicable) and have an Article VII application deemed complete (if applicable); or (2) are under construction and scheduled to be in-service within 12 months after the Cluster Study Process Start Date; and

(ix) all other changes to existing facilities – other than changes that are subject to, as applicable, Class Year Study or Cluster Study cost allocation but that have not accepted their Class Year or Cluster Study cost allocation or have not paid cash or posted Security for their accepted cost allocation – that are identified in the NYISO Load and Capacity Data Report or reported before the start date of the Customer Engagement Window for the Cluster Study Process by Market Participants to the ISO as scheduled to occur during the five year cost allocation study planning period.

40.10.3.2 Facilities in a Mothball Outage, an ICAP Ineligible Forced Outage, or Inactive Reserves will be modeled as in, and not removed from, the Existing System Representation.

40.10.3.3 If the ISO has triggered multiple Transmission Projects under its Reliability Planning Process, the ISO will include in the base case the selected Transmission Project until or unless that project is halted or its Development Agreement is terminated, in which case the ISO will include in the base case the regulated backstop solution.

40.10.3.4 The point of interconnection of a Retired generator with a terminated interconnection agreement is available to proposed facilities on a non-discriminatory basis pursuant to the ISO's applicable interconnection and transmission expansion processes and procedures. A Retired generator with an interconnection agreement that remains in effect after it is Retired will retain its right to the specific point of interconnection as provided for in the interconnection agreement and access to this point will not be available for new facilities.

#### **40.10.4 Phase 1 Study Scope and Procedures**

40.10.4.1 Within five (5) Business Days of the Phase 1 Study Start Date, the ISO will provide to the Connecting Transmission Owners and Affected Transmission Owners an updated Cluster Study Project List and the finalized CPA short-circuit base case. Upon the ISO's

submission of these materials, (i) the Connecting Transmission Owner identified by the ISO pursuant to Section 40.5.7.1.1 on which system a Cluster Study Project proposes to interconnect shall commence and perform a Phase 1 Study for that project, and (ii) any Affected Transmission Owner identified by the ISO pursuant to Section 40.5.7.1.1 which system is impacted by the proposed interconnection of a Cluster Study Project shall commence and perform a separate Phase 1 Study for that project, unless the Affected Transmission Owner indicates that no study is required or agrees with the Connecting Transmission Owner to include its input with the Connecting Transmission Owner's Phase 1 Study report. For the Transition Cluster Study, if, within ten (10) Business Days of the start of the Customer Engagement Window, a Connecting Transmission Owner or Affected Transmission Owner demonstrates to the ISO good cause that it is unable to perform or use a contractor to perform (i) a Phase 1 Study in accordance with the requirements in Sections 40.10.4 and 40.10.5, and/or (ii) the Transmission Owner's responsibilities for the Phase 2 Study in accordance with the requirements in Section 40.11.2.2 and 40.11.4, or (iii) the Transmission Owner's responsibilities for the Additional SDU Study in accordance with the requirements in Section 40.14.2.2, then the ISO will use a third party contractor pursuant to Section 40.24.4 to perform the studies in accordance with the requirements in, as applicable, Sections 40.10.4, 40.10.5, 40.11.2.2, 40.11.4, and 40.14.2.2 provided that the Connecting Transmission Owner or Affected Transmission Owner will use commercially reasonable efforts, and coordinate directly with the ISO or its contractor (as applicable), to support the development of and performance of the studies and the completion of the draft and final studies within the timeframes in, as applicable, Sections 40.10.4, 40.10.5, 40.11.2.2, 40.11.4, and 40.14.2.2. The Phase 1 Studies for all of the Cluster Study Projects participating in a given Cluster shall be performed to the extent practicable on a concurrent basis

during the Phase 1 Study period; *provided, however*, that a Phase 1 Study will not be performed for a CRIS-Only Cluster Study Project.

40.10.4.2 For purposes of the Phase 1 Study, the Connecting Transmission Owner or Affected Transmission Owner shall perform a design and engineering study to identify the Connecting Transmission Owner's Attachment Facilities, Distribution Upgrades, and Local System Upgrade Facilities, along with the related metering, protection, and telecommunication facilities, required to reliably interconnect the Cluster Study Project with the New York State Transmission System or Distribution System in accordance with Applicable Reliability Requirements to the extent such upgrades are not Physically Infeasible. The Phase 1 Study will evaluate any potential control equipment proposed by the Interconnection Customer for requests for ERIS that are lower than the full output of the Facility and will identify any required interconnection facilities for system protection and coordination purposes. The Phase 1 Study will also identify the electrical switching configuration of the connection equipment, including, without limitation: the transformer, switchgear, meters, and other station equipment, and shall evaluate the use of static synchronous compensators, static VAR compensators, advanced power flow control devices, transmission switching, synchronous condensers, voltage source converters, advanced conductors, and tower lifting. The Connecting Transmission Owner or Affected Transmission Owner, as applicable, shall evaluate each identified alternative transmission technology and determine whether the above technologies should be used, consistent with Good Utility Practice, Applicable Reliability Requirements, and Applicable Laws and Regulations. The Connecting Transmission Owner or Affected Transmission Owner, as applicable, shall include an explanation of the results of the evaluation for each technology in the Phase 1 Study report, as applicable.

40.10.4.3 The Phase 1 Study shall determine a +30%/-15% estimate of the costs of the equipment, engineering and design work, procurement and construction work and commissioning of the required Local System Upgrade Facilities, Distribution Upgrades, and Connecting Transmission Owner's Interconnection Facilities that are identified in the study in accordance with Good Utility Practice and, for each of these cost categories, shall specify and estimate the cost of the work to be done at each substation and/or transmission or, if applicable, distribution line to physically and electrically connect each facility in the Cluster to the New York State Transmission System and Distribution System. The Transmission Owner will calculate cost estimates based on the assumption that the activities for which the cost estimates are calculated are the responsibility of the Transmission Owner and shall be subject to reasonable exclusions (*e.g.*, environmental, subsurface conditions, permitting, site acquisition costs). The categories of costs excluded from the estimates shall be identified in the Phase 1 Study report and the Standard Interconnection Agreement. The Phase 1 Study shall also include a preliminary schedule showing the estimated time required to complete the engineering and design, procurement, construction, installation and commissioning phases for the required Local System Upgrade Facilities, Distribution Upgrades, and Connecting Transmission Owner's Interconnection Facilities identified in the study.

40.10.4.4 Upon request, the Connecting Transmission Owner or Affected Transmission Owner shall provide each Cluster Study Project for which it has performed a Phase 1 Study supporting documentation, workpapers, and databases or data developed in the preparation of the Phase 1 Study, subject to non-disclosure arrangements consistent with Section 40.24.1.



40.10.4.5 The ISO, Connecting Transmission Owner, Affected Transmission Owner, or Affected System Operator, as applicable, may use subgroups in the Phase 1 Study or Phase 2 Study. The criteria used to define and determine subgroups will be set forth in ISO Procedures.

40.10.4.6 Prior to the end of the Application Window of a given Cluster Study Process, the ISO and Transmission Owners shall enter into appropriate agreements concerning the performance of that Cluster Study, which terms shall not be inconsistent with the requirements in this Attachment HH.

#### **40.10.5 Phase 1 Study Reports**

The Connecting Transmission Owner or Affected Transmission Owner shall provide its draft Phase 1 Study report for a Cluster Study Project to the Interconnection Customer and the ISO no later than one hundred fifty (150) Calendar Days after the date the ISO provided it with the updated Cluster Study Project List and the CPA short-circuit base case pursuant to Section 40.10.4.1. The ISO shall establish a period of at least ten (10) Business Days for the Interconnection Customer, Affected Transmission Owner(s), and the ISO to review and provide comments on the draft report. The Connecting Transmission Owners and Affected Transmission Owners shall review comments and issue a finalized Phase 1 Study report to the ISO no later than one hundred eighty (180) Calendar Days after the date the ISO provided it with the updated Cluster Study Project List and the CPA short-circuit base case pursuant to Section 40.10.4.1.

#### **40.10.6 Stakeholder Review of the Phase 1 Cost Estimates Summary Report**

Following the ISO's receipt of the draft Phase 1 Study reports, the ISO will present a draft Phase 1 Cost Estimates Summary Report that summarizes the cost estimates identified for Cluster Study Projects in the draft Phase 1 Studies to the ISO's Operating Committee's Transmission Planning Advisory Subcommittee. Following its receipt of the finalized Phase 1

Study reports, the ISO will update the draft Phase 1 Cost Estimates Summary Report and present the final Phase 1 Cost Estimates Summary Report to stakeholders for approval at the ISO's Operating Committee.

#### **40.10.7 Preparatory Work for Phase 2 Study**

##### **40.10.7.1 Bus Flow Analysis and Individual Breaker Analysis**

40.10.7.1.1 Within sixty (60) Calendar Days of the Phase 1 Study Start Date, the ISO will provide to the Connecting Transmission Owners the finalized CBA and CPA steady state base cases. Except as otherwise indicated in Section 40.10.7.1.3, upon the ISO's submission of these base cases, the Connecting Transmission Owner shall be responsible for performing the bus flow analysis, as applicable, for its system for purposes of the ISO's thermal analysis for the Phase 2 Study and coordinating with the ISO for the development of any required solutions within the timeframe set forth in Section 40.10.7.1.4.

40.10.7.1.2 During the Phase 1 Study process, the ISO, in consultation with the Connecting Transmission Owner, will determine whether an assessment of individual breakers on the Connecting Transmission Owner's system is required. Except as otherwise indicated in Section 40.10.7.1.3, upon this determination, the Connecting Transmission Owner shall be responsible for performing the individual breaker analysis for its system for purposes of the ISO's short-circuit analysis for the Phase 2 Study and coordinating with the ISO for the development of any required solutions within the timeframe set forth in Section 40.10.7.1.4.

40.10.7.1.3 A Connecting Transmission Owner may elect for the ISO to perform the bus flow analysis and/or the individual breaker analysis for that Connecting Transmission Owner's system by notifying the ISO of this election within fifteen (15) Business Days of the start date of the Customer Engagement Window. If a Connecting Transmission Owner makes this election, it

must provide the ISO with the ratings of its equipment and the one-line diagrams for the Cluster Study Projects proposing to connect to its system within sixty (60) Calendar Days of the Phase 1 Study Start Date to enable the ISO to perform the analysis, provided that the ISO and Connecting Transmission Owner may agree that this information is only required for certain projects. The ISO shall then be responsible for performing the bus flow analysis and/or individual breaker analysis for the Connecting Transmission Owner's system within the timeframe set forth in Section 40.10.7.1.4.

40.10.7.1.4 The Connecting Transmission Owner or ISO, as applicable, may commence the bus flow analysis during the Phase 1 Study and must complete the analysis and the Connecting Transmission Owner must identify any required solutions no later than sixty (60) Calendar Days after the Phase 2 Study Start Date. The Connecting Transmission Owner or ISO, as applicable, may commence the individual breaker analysis during the Phase 1 Study and must complete the analysis and the ISO must identify any required solutions no later than sixty (60) Calendar Days after the Phase 2 Study Start Date. Within this time period, the Connecting Transmission Owner or ISO performing the analysis must provide the other entity (*i.e.*, the ISO or Connecting Transmission Owner) a period of at least ten (10) Business Days to review and provide comments on the draft results of the analysis.

#### 40.10.7.2 Cost Recovery

To the extent the ISO, Connecting Transmission Owner(s), and Affected Transmission Owners commence study work for the Phase 2 Study during the Phase 1 Study period, Interconnection Customers shall be responsible for such study costs.

### 40.10.8 Phase 2 Entry Decision Period

40.10.8.1 The Phase 2 Entry Decision Period for the Cluster Study Process shall commence on the first Business Day after the ISO's Operating Committee's approval of the Phase 1 Cost Estimates Summary Report in accordance with Section 40.10.6.

40.10.8.2 The Phase 2 Entry Decision Period shall be a ten (10) Business Day period.

40.10.8.3 A Cluster Study Project shall be included in the Phase 2 Study if, during the Phase 2 Entry Decision Period, the Interconnection Customer for the Cluster Study Project notifies the ISO of its election to proceed to the Phase 2 Study, and, as applicable:

- (i) satisfies the Readiness Deposit 2 requirements for its Cluster Study Project as determined in accordance with Section 40.10.8.4; *provided, however*, that a CRIS-Only Cluster Study Project is not required to provide Readiness Deposit 2 to proceed to the Phase 2 Study; and
- (ii) if Interconnection Customer submitted a Site Control Deposit with its Interconnection Request in lieu of demonstrating Site Control in accordance with Section 40.5.5.1.5.1, Interconnection Customer must satisfy the requirements in Section 40.5.5.4.

40.10.8.4 The Readiness Deposit 2 for a Cluster Study Project is the greater of: (i) the Readiness Deposit 1 amount for the Cluster Study Project, and (ii) 20% of the cost estimate determined in the Phase 1 Study for any Connecting Transmission Owner's Attachment Facilities, Distribution Upgrades, and Local System Upgrade Facilities for the Cluster Study Project.

40.10.8.4.1 To satisfy the Readiness Deposit 2 requirement for the Cluster Study Project, the Interconnection Customer must submit to the ISO during the Phase 2 Entry Decision Period in accordance with the requirements in Section 40.2.4.2 the incremental

difference, if any, between the Readiness Deposit 1 amount that it previously submitted for the project and the Readiness Deposit 2 amount for the project calculated pursuant to this Section 40.10.8.4. If the Readiness Deposit 1 amount for the project is the same as the Readiness Deposit 2 amount calculated pursuant to this Section 40.10.8.4, Interconnection Customer is not required to take any action during the Phase 2 Entry Decision Period to satisfy the Readiness Deposit 2 requirement.

40.10.8.4.2 The Readiness Deposit 1 amount for the Cluster Study Project and the incremental difference for the project, if any, submitted by the Interconnection Customer pursuant to this Section 40.10.8.4 shall, in total, constitute the Readiness Deposit 2 for the Cluster Study Project and replace the Readiness Deposit 1 for the project.

#### **40.10.9 Withdrawal and Withdrawal Penalties**

40.10.9.1 If an Interconnection Customer does not satisfy the requirements in Section 40.10.8.3 for the Cluster Study Project to proceed to the Phase 2 Study, then the ISO shall withdraw the Interconnection Request or CRIS-Only Request for the Cluster Study Project from the ISO's Queue pursuant to the Withdrawal requirements in Section 40.6.4.

40.10.9.2 If an Interconnection Customer withdraws the Interconnection Request or CRIS-Only Request for a Cluster Study Project, or the Interconnection Request or CRIS-Only Request for the Cluster Study Project is deemed withdrawn by the ISO, from the ISO's Queue during the Phase 1 Study or at the Phase 2 Entry Decision Period, the Interconnection Customer for the Cluster Study Project shall pay a Withdrawal Penalty in an amount equal to fifty percent (50%) of its initial Study Deposit and ten percent (10%) of its Readiness Deposit 1 for the project; except for the following:

(i) a CRIS-Only Cluster Study Project shall only pay a Withdrawal Penalty in the amount of fifty percent (50%) of its initial Study Deposit amount;

(ii) if the ISO determined that the Cluster Study Project cannot move forward due to Physical Infeasibility pursuant to Section 40.7.3, then the Cluster Study Project shall not be assessed a Withdrawal Penalty; and

(iii) if the Interconnection Request or CRIS-Only Request was for a Contingent Project that was withdrawn by the ISO pursuant to Section 40.5.4.1.3, then the Interconnection Request or CRIS-Only Request shall not be assessed a Withdrawal Penalty.

40.10.9.3 The ISO shall invoice, and Interconnection Customer shall pay, for any Withdrawal Penalty as set forth in Section 40.24.3.

40.10.9.4 The ISO shall apply the collected Withdrawal Penalty Funds pursuant to Section 40.6.5.