Attachment A

STANDARDS FOR INTERCONNECTION OF DISTRIBUTED GENERATION

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Commented [A1]: We recommend changing the title of the Standards to reflect the definitional changes such that they apply to Distributed Energy Resources and not just Distributed Generation. This is reflected in the consensus document changes to the definitions.

Commented [A2]: We have not updated this table. In order to make this redline easier to reference we removed page breaks and other formatting in places to allow edits to flow the subsequent pages. We also added page numbers for ease of reference.

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1.0 GENERAL

1.1 Applicability

This document ("Interconnection Tariff") describes the process and requirements for an Interconnecting Customer to connect a ~~power generating facility~~Facility to the Company's Electric Power System ("Company EPS"), including discussion of technical and operating requirements, metering and billing options, and other matters, except as provided under the applicable ISO-NE tariff, and/or under the Qualifying Facility regulations in 220 CMR 8.04.

The procedure for momentary paralleling to the Company EPS with back-up generation is described within Section 4.0 Interconnection Requirements.

If the Facility will always be isolated from the Company's EPS, (i.e., it will never operate in parallel to the Company's EPS), then this Interconnection Tariff does not apply.

1.2 Definitions

The following words and terms shall be understood to have the following meanings when used in this Interconnection Tariff:

"Affected System" shall mean any neighboring EPS not under the control of the Company (i.e., a municipal electric light company or other regulated utility).

"Affiliate" shall mean a person or entity controlling, controlled by or under common control with a Party.

"Anti-Islanding" shall mean a description of the ability of a Facility to avoid unintentional islanding through some form of active control technique.

"Interconnection Application" shall mean the notice (which will serve as the Notice of Intent to Interconnect under 220 C.M.R. §§ 8.00 et seq. when required) provided by Interconnecting Customer to the Company in the form shown in Exhibits A and C which initiates the interconnection process.

"Area EPS" shall mean the Company EPS. This term is used in the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547-2003, "IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems" ("IEEE Standard 1547-2003").

"Authorization to Interconnect" shall mean an official written notification provided by the Company to the Interconnecting Customer, authorizing the Interconnecting Customer to activate and operate the Facility subject to the terms of the Interconnection Service Agreement.

"Business Day" shall be defined as the next working day, not including Saturday, Sunday or a legal holiday, after a request or application has been received by the Company.

Commented [A3]: Throughout the Standards we have suggested using the defined term Facility which is inclusive of energy storage systems.

Commented [A4]: The new additions herein and changes to existing definitions reflect those submitted in the consensus document. EXCEPT we have added a definition of Modification, Material Modification, and Power Control System.

"Certificate of Completion" shall mean the form required as proof that the installed Facility has been inspected by the local electrical wiring inspector or other jurisdictional authority.

"Class I Net Metering Facility" shall mean a plant or equipment that is used to produce, manufacture, or otherwise generate electricity and that is not a transmission facility and that has a design capacity of 60 kilowatts or less.

"Class II Net Metering Facility" shall mean an Agricultural Net Metering Facility, Anaerobic Digestion Net Metering Facility, Solar Net Metering Facility, or Wind Net Metering Facility with a generating capacity of more than 60 kilowatts but less than or equal to one megawatt; provided, however, that a Class II Net Metering Facility that is a Net Metering Facility of a Municipality or Other Governmental Entity may have a generating capacity of more than 60 kilowatts but less than or equal to one megawatt per unit.[1]

"Class III Net Metering Facility" shall mean an Agricultural Net Metering Facility, Anaerobic Digestion Net Metering Facility, Solar Net Metering Facility, or Wind Net Metering Facility with a generating capacity of more than one megawatt but less than or equal to two megawatts; provided, however, that a Class III Net Metering Facility that is a Net Metering Facility of a Municipality or Other Governmental Entity may have a generating capacity of more than one megawatt but less than or equal to two megawatts per unit.

Commented [A5]: We have not modified the terms herein because they are derived from statute. However, we note that to be consistent with the terms used in the rest of the tariff it may be preferable to change the terms "design capacity" and "generating capacity" to "Nameplate Rating."

"Common Study Area" shall mean a discrete portion of the Company EPS where the operation of multiple Interconnecting Customers' Facilities may have cumulatively adverse EPS impacts. The Company shall determine if applications fall within a Common Study Area. A Common Study Area may include, but is not limited to, an area that: (1) is fed from a common substation transformer, or (2) is bounded by a circuit.

"Company" shall mean NSTAR Electric Company d/b/a Eversource Energy, as applicable.

"Company EPS" shall mean the electric power system owned, controlled or operated by the Company used to provide distribution service to its Customers.

"Compliance Documentation" shall mean and include any documentation required to determine that the Interconnecting Customer is in compliance with requirements of the Tariff, including the applications, exhibits and agreements attached thereto, and such documentation includes, as applicable: final as-built one-line diagrams, photos, witness test results, local wiring inspection approval, completed Certificate of Completion, certified relay test results, printout of inverter settings, insurance certificates, P-rate agreement, Exhibit H (retail customer agreement), landowner agreement, easements for system modifications, and, if the Facility is net metering, a completed Schedule Z, a net metering cap allocation from the System of Assurance, and, for a Facility that is included in the public net metering cap, certification from the Department that the Host Customer and all off-takers qualify as a municipality or other governmental entity.

"Conditional Approval to Interconnect" shall mean an official written notification provided by the

[1] Any terms used herein but not defined shall have the meaning as ascribed in the Company's Net Metering Tariff, as amended or superseded from time to time.

Company to the Interconnecting Customer approving of the proposed system design of a proposed Facility and authorizing the Interconnecting Customer to test but not commence commercial operation of that Facility subject to the terms of the Exhibit A, Simplified Process Interconnection Application and Service Agreement.

"Customer" shall mean any person, partnership, corporation, or any other entity whether public or private who obtains distribution service at a Customer delivery point and who is a customer of record of the Company for its own electricity consumption.

"Department" shall mean the Massachusetts Department of Public Utilities.

"Detailed Study" shall mean the final phase of engineering study, if necessary, conducted by the Company to determine substantial System Modifications to its EPS, resulting in project cost estimates and a construction schedule for such modifications that willbe required to provide the requested interconnection service.

"DG" shall mean Distributed Generation.

"DER" shall mean ~~the Facility~~Distributed Energy Resource. ~~This term is used in IEEE Standard 1547-2003.~~

"Energy Storage System" means a device that captures energy produced at one time, stores that energy for a period of time, and delivers that energy as electricity for use at a future time. For purposes of this Interconnection Tariff, an Energy Storage System can be considered part of a Facility or a Facility in whole.

"Expedited Process" shall mean, as described in Section 3.3, process steps for Listed Facilities from initial application to final written authorization, using a set of technical screens to determine impact on the Company EPS.

"Export Capacity" means the maximum Nameplate Rating of a Facility in alternating current (AC), except where such capacity is limited by an acceptable means as identified in Section 4.3 of this Interconnection Tariff, or as permitted by the Company.

"Facility" shall mean the sum of all equipment that is owned and/or operated by the Interconnecting Customer and located on the Interconnecting Customer's side of the PCC that is used to generate, store, monitor, and control electric power, which the Interconnecting Customer requests to interconnect to the Company EPS.

"FERC" shall mean Federal Energy Regulatory Commission.

"Force Majeure Event" shall mean any event that is beyond the reasonable control of the affected Company or Interconnecting Customer, and that the affected Company or Interconnecting Customer is unable to prevent or provide against by exercising commercially reasonable efforts, including the following events

or circumstances, but only to the extent they satisfy the preceding requirements: acts of war or terrorism, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fire; strikes, work stoppages, or labor disputes; embargoes; and sabotage. For the treatment of Force Majeure see Section 3.7.

"Good Utility Practice" shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

"Group" shall mean all proposed Facilities studied as part of a Group Study or those Facilities' applicants (as determined by the context). The order of applicants within a Group shall be determined on the basis of the date the applicants' applications were deemed complete by the Company. The application completion date for the Group shall be defined as the earliest application completion date of any active application in the Common Study Area (excluding applications that have progressed through a Preceding Study).
"Group Study" shall mean a modified Impact Study that is performed for a Group of applications whenever two or more applications are awaiting completion of a Preceding Study within a Common Study Area, as provided in Section 3.4.1. The Group Study shall be performed once the Preceding Study is completed, instead of each application undergoing Impact Studies sequentially.

"Impact Study" shall mean the engineering study conducted by the Company under the Standard Process to determine the scope of the required modifications to its EPS and/or the Facility to provide the requested interconnection service.

"Inadvertent Export" means the unscheduled or unintended export of power from a Facility, exceeding a specified magnitude and for a limited duration. Inadvertent Export does not include fault current exported by the Facility due to a fault on the Company EPS.

"In-Service Date" shall mean the date on which the Facility and System Modifications (if applicable) are complete and ready for service, even if the Facility is not placed in service on or by that date.

"Interconnecting Customer" shall mean the entity that owns and/or operates the Facility interconnected to the Company EPS, with legal authority to enter into agreements regarding the construction or operation of the Facility.[2]

"Interconnection Service Agreement" shall mean an agreement for interconnection service, the form of

[2] An entity which owns the Facility interconnected to the Company EPS solely as part of a financing arrangement, which could include the acquisition of the tax credits related to the Facility, but is neither the Customer nor the operator of that Facility, shall not be considered the Interconnecting Customer hereunder.

which is provided in Exhibit G, between the Interconnecting Customer and the Company. The agreement also includes terms and conditions, attachments describing the Facility, system modifications, payment terms and construction schedule (if applicable) and any amendments or supplements thereto entered into by the Interconnecting Customer and the Company.

"Interconnection Tariff" shall mean these Standards for Interconnection of Distributed Energy Resources ~~Generation~~. The Interconnection Tariff is a regulatory document enforced by the Department.

"Islanding" shall mean a situation where electrical power remains in a portion of an electrical power system when the Company's transmission or distribution system has ceased providing power for whatever reason (emergency conditions, maintenance, etc.). Islanding may be intentional, such as when certain segregated loads in an Interconnecting Customer or Customer's premises are provided power by a Facility after being isolated from the Company EPS after a power failure. Unintentional Islanding, especially past the PCC, is to be strictly avoided.

"ISO-New England, Inc. ("ISO-NE")" shall mean the Independent System Operator established in accordance with the NEPOOL Agreement and applicable FERC approvals, which is responsible for managing the bulk power generation and transmission systems in New England.

"Isolated" shall mean the state of operating the Facility when electrically disconnected from the Company EPS on the Interconnecting Customer's side of the PCC.

"Landowner" shall mean the owner of real property where the Facility is sited. In cases where the Landowner is not the Customer or Interconnecting Customer, a Landowner Consent Agreement will be required (see Exhibit I).

"Local EPS" shall mean the premises within which are contained the Facility. This term is used in the IEEE Standard 1547-2003.

"Limited Export" shall mean the exporting capability of the Facility that is maintained to be less than the Nameplate Rating described in Section 4.3.

"Listed" shall mean a Facility that has successfully passed all pertinent tests to conform with IEEE 1547.1.

"Material Modification" shall mean a Modification that has a material adverse impact on a subsequently queued application in the interconnection queue, or a Modification described below (regardless of impact to a subsequently queued project):

1. A change in the parcel on which the Facility is located.
2. An increase in the export capacity of the originally proposed Facility of greater than 2%.

"Modification" shall mean a change to the ownership, equipment, equipment ratings, or operating characteristics of the Facility.

Commented [A6]: The JESS proposes to create a more clearly defined policy for addressing Material Modifications. In addition to these definitions see the newly proposed section 3.6 below. All are discussed further in our comments.

"Metering Point" shall mean, for meters that do not use instrument transformers, the point at which the billing meter is connected. For meters that use instrument transformers, the point at which the instrument transformers are connected.

"Nameplate Rating" shall mean the individual or sum total maximum continuous power output (AC) capacity of all of a Facility's constituent generating units and/or Energy Storage Systems as identified on the manufacturer nameplate, regardless of whether it is limited by any approved means.

"NEPOOL" shall mean New England Power Pool.
"Net Metering" shall mean the process of measuring the difference between electricity delivered by the Company and electricity generated by a Class I, Class II, or Class III Net Metering Facility and fed back to the Company.

"Network Distribution System (Area or Spot)" shall mean electrical service from an EPS consisting of one or more primary circuits from one or more substations or transmission supply points arranged such that they collectively feed secondary circuits serving one (a spot network) or more (an area network) Interconnecting Customers.

"Non-Islanding" shall mean the ability of a Facility to avoid unintentional islanding through the operation of its interconnection equipment.

"NPCC" shall mean Northeast Power Coordinating Council.

"On-Site Generating Facility" shall mean a class of Interconnecting Customer-owned generating Facilities with peak capacity of 60 kW or less, as defined in 220 C.M.R. § 8.00.

"Operating Schedule" shall mean the manner in which the Facility is designed to be operated, as designated in the Interconnection Application materials, including the amount of export, the times of year, hours of the day and other relevant conditions.

"Parallel" shall mean the state of operating the Facility when electrically connected to and synchronized with the Company EPS (sometimes known as grid-parallel).

"Parties" shall mean the Company and the Interconnecting Customer, and "Party" shall mean either the Company and/or Interconnecting Customer, as determined by context.

"Point of Common Coupling (PCC)" shall mean the point where the Interconnecting Customer's local electric power system connects to the Company EPS, such as the electric power revenue meter or Company's service transformer. The PCC shall be specified in the Interconnection Service Agreement.

"Point of Delivery" shall mean a point on the Company EPS where the Interconnecting Customer makes capacity and energy available to the Company. The Point of Delivery shall be specified in the Interconnection Service Agreement.

"Point of Receipt" shall mean a point on the Company EPS where the Company delivers capacity and energy to the Interconnecting Customer.

"Power Control System" (PCS) shall mean systems or devices which electronically limit or control steady state currents to a programmable limit.

"Pre-Application Report" shall mean, as described in Section 3.2, a non-binding report of certain information specific to a proposed Facility interconnection location provided to the Interconnecting Customer by the Company prior to the Application.

"Preceding Study" shall mean any study that is required by the Company to be completed prior to commencing the Group Study process for the remaining applicant(s) in a Common Study Area. A Preceding Study shall be deemed to have commenced upon execution of the relevant Impact Study Agreement(s) and the initial payment of the study costs. A Preceding Study shall be deemed to be complete upon issuance of the final Impact or Group Study report.

"Protective Function" shall mean the equipment, hardware and/or software in a Facility (whether discrete or integrated with other functions) whose purpose is to protect against conditions that, if left uncorrected, could result in harm to personnel, damage to equipment, loss of safety or reliability, or operation outside pre-established parameters required by the Interconnection Service Agreement.

"Public Facility" shall mean any Facility (1) that is owned or operated by a municipality or other governmental entity; or (2) that is sited on land of a municipality or other governmental entity; or (3) which for purposes of Net Metering qualifies as a Net Metering Facility of a Municipality or Other Governmental Entity.

"Qualifying Facility" shall mean a generation Facility that has received certification as a Qualifying Facility from the FERC in accordance with the Federal Power Act, as amended by the Public Utility Regulatory Policies Act of 1978, as defined in 220 C.M.R. § 11.04.

"Radial Distribution Circuit" shall mean electrical service from an EPS consisting of one primary circuit extending from a single substation or transmission supply point arranged such that the primary circuit serves Interconnecting Customers in a particular local area.

"Screen(s)" shall mean criteria by which the Company will determine if a proposed Facility's installation will adversely impact the Company EPS in the Simplified and Expedited Processes as set forth in Section 3.0.

"Simplified Process" shall mean, as described in Section 3.1, process steps from initial application to final written authorization for certain inverter-based Facilities of limited scale and minimal apparent grid impact.

Commented [A7]: The parties were not able to reach consensus on a definition of Power Control System. (PCS) The definition we have proposed is based on the definition used in the UL CRD. In section 4.3 we propose using PCS that have been tested to the CRD, but there may also be other PCS that could be proposed that do not meet the CRD test requirements and could be acceptable using the "by agreement" option. It is not certain that UL 1741 will be the standard that incorporates these test procedures, so at this time it is preferable not to directly reference that as a requirement.

"Solar Facility" shall mean a facility for the production of electrical energy that uses sunlight to generate electricity and is interconnected to the Company EPS.

"Standard Process" shall mean, as described in Section 3.4, process steps from initial application to final written authorization for Facilities that do not qualify for Simplified or Expedited treatment.

"Supplemental Review" shall mean additional engineering study to evaluate the potential impact of the Facility on the Company EPS so as to determine any requirements for processing the application through the Expedited Process.

"System Modification" shall mean modifications or additions to distribution-related Company facilities that are integrated with the Company EPS for the benefit of the Interconnecting Customer.

"Time Frame" shall mean each step in the pertinent interconnection process with a Company or Interconnecting Customer obligation of completion within the relevant Business Days in this Interconnection Tariff beginning on the next Business Day following the completion of the prior step and concluding with the applicable deliverable in this Interconnection Tariff. The Company shall report annually to the Department on its compliance with all Time Frames as provided in Department order D.P.U. 11-75-F.

"Unintentional Islanding" shall mean a situation where the electrical power from the Facility continues to supply a portion of the Company EPS past the PCC when the Company's transmission or distribution system has ceased providing power for whatever reason (emergency conditions, maintenance, etc.).

"Witness Test" shall mean the Company's right to witness the commissioning testing and/or Company-required Interconnecting Customer-owned communication system. Commissioning testing is defined in IEEE Standard 1547-2003.

1.3 Forms and Agreements

The following documents for the interconnection process are included as Exhibits:

1) Interconnection Service Agreement for Expedited and Standard Process (Exhibit G) referencing Attachments 1 – 7 (Attachments 1-7 to be developed and included as appropriate for each specific Interconnection Service Agreement) as follows:

   Attachment 1: Description of Facilities, including demarcation of Point of Common Coupling

   Attachment 2: Description of System Modifications

   Attachment 3: Costs of System Modifications & Payment Terms

   Attachment 4: Special Operating Requirements, if any

Attachment 5: Agreement between the Company and the Company's Retail Customer (to be signed by the Company's retail Customer where DG installation and interconnection will be placed, when retail Customer is not the owner and/or operator of the distributed generation facility -- Exhibit H)

Attachment 6: Landowner Consent Agreement (to be signed by the Landowner where the DG Facility will be located when the Landowner is neither the Customer nor Interconnecting Customer --Exhibit I)

Attachment 7: System Modifications construction schedule

2) Application forms

a) Simplified Process (Facilities meeting the requirements of Section 3.1) application form and service agreement (Exhibit A)

b) Pre-Application Report Form (Exhibit B)

c) Expedited and Standard Process application form (Exhibit C)

3) Supplemental Review Agreement for those projects which have failed one or more screens in the Expedited Process (Exhibit D)

4) Impact Study Agreement under the Standard Process (Exhibit E)

5) Detailed Study Agreement for the more detailed study under the Standard Process which requires substantial System Modifications (Exhibit F)

6) Agreement Between the Company and the Company's Retail Customer (Exhibit H)

7) Landowner Consent Agreement (Exhibit I)

8) Schedule Z – Additional Information Required for Net Metering Service

2.0 BASIC UNDERSTANDINGS

Interconnecting Customer intends to install a Facility on the Interconnecting Customer's side of the PCC that will be connected electrically to the Company EPS and operate in parallel, synchronized with the voltage and frequency maintained by the Company during all operating conditions. It is the responsibility of the Interconnecting Customer to design, procure, install, operate, and maintain all necessary equipment on its property for connection to the Company EPS. The Interconnecting Customer and the Company shall enter into an Interconnection Service Agreement to provide for parallel operation of an Interconnecting Customer's Facility with Company EPS. A form of this agreement is attached as Exhibit G to this

Interconnection Tariff. If the Interconnecting Customer is not the Customer, an Agreement between the Company and the Company's Customer must be signed and included as an attachment to the Interconnection Service Agreement; a form of this agreement is attached as Exhibit H. If neither the Interconnecting Customer nor the Customer is the Landowner, then a Landowner Consent Agreement must be signed and included as an attachment to the Interconnection Service Agreement, unless the Company, in its sole discretion, waives this requirement; see Exhibit I.

The interconnection of the Facility with the Company EPS must be reviewed for potential impact on the Company EPS under the process described in Section 3.0 and meet the technical requirements in Section 4.0, and must be operated as described under Section 6.0. In order to meet these requirements, an upgrade or other modifications to the Company EPS may be necessary. Subject to the requirements contained in this Interconnection Tariff, the Company or its Affiliate shall modify the Company EPS accordingly.

Unless otherwise specified, the Company will build and own, as part of the Company EPS, all facilities necessary to interconnect the Company EPS with the Facility up to and including terminations at the PCC. The Interconnecting Customer shall pay all System Modification costs as set forth in Section 5.0.

The Interconnecting Customer should consult the Company before designing, purchasing and installing any generation equipment, in order to verify the nominal utilization voltages, frequency, and phase characteristics of the service to be supplied, the capacity available, and the suitability of the proposed equipment for operation at the intended location. Attempting to operate a generator at other than its nameplate characteristics may result in unsatisfactory performance or, in certain instances, injury to personnel and/or damage to equipment. The Interconnecting Customer will be responsible for ascertaining from the Company, and the Company will diligently cooperate in providing, the service characteristics of the Company EPS at the proposed PCC. The Company will in no way be responsible for damages sustained as a result of the Interconnecting Customer's failure to ascertain the service characteristics at the proposed PCC.

The Facility should operate in such a manner that does not compromise, or conflict with, the safety or reliability of the Company EPS. The Interconnecting Customer should design its equipment in such a manner that faults or other disturbances on the Company EPS do not cause damage to the Interconnecting Customer's equipment.

Authorization to Interconnect will be provided once the Interconnecting Customer has met all terms of the interconnection process as outlined below.

This Interconnection Tariff does not cover general distribution service needed to serve the Interconnecting Customer. Please refer to the Company's Terms and Conditions for Distribution Service. This Interconnection Tariff does not cover the use of the distribution system to export power, or the purchase of excess power unless covered under 220 C.M.R. §§ 8.00 et seq.

3.0 PROCESS OVERVIEW

Commented [A8]: The redlines to section 3.0 are the same as those submitting in the consensus document. They may appear in track changes slightly differently because we pasted in the final format in bulk in some places rather than adding the changes word by word.

There are three basic paths for interconnection of the Interconnecting Customer's Facility in Massachusetts. They are described below and detailed in Figures 1 and 2 with their accompanying notes. Tables 1 - 6, respectively, describe the Time Frames and fees for these paths. Unless otherwise noted, all Time Frames in the Interconnection Tariff reference Company Business Days.

Prior to submitting an Application through either the Expedited or Standard Process, all Interconnecting Customers ~~with~~ seeking to interconnect Facilities ~~that are~~with a Nameplate Rating of 500kW or greater must request and receive a Pre-Application Report from the Company. If the Pre-Application is not received within the applicable Time Frame, the Interconnecting Customer can file its Application. The Pre-Application Form is located in Exhibit B and the Pre-Application Report process is described in more detail in Section 3.2.

~~1) Simplified – This is for Listed inverter-based Facilities with a power rating of 15 kW or less single-phase or 25 kW or less three-phase depending on the service configuration, and located on radial EPSs under certain conditions. A Listed inverter-based Facility located on a spot network EPS with a rating less than 1/15 of the Interconnecting Customer's minimum load or on an areas network EPS with a rating less than 1/15 of the Interconnecting Customer's minimum load and 15 kW or less would also be eligible.~~

1) Simplified – This is for Listed Facilities that meet the eligibility criteria as specified in Section 3.1.

2) Expedited – This is for Listed Facilities that pass certain pre-specified screens on a radial EPS.

3) Standard – This is for all facilities not qualifying for either the Simplified or Expedited interconnection processes on radial and spot network EPSs, and for all Facilities on area network EPSs.

All proposed ~~new sources of electric power~~Facilities without respect to generator ownership, dispatch control, or prime mover that plan to operate in parallel with the Company EPS must submit a completed application and pay the appropriate application fee to the Company with which it wishes to interconnect. The application will be acknowledged by the Company, and the Interconnecting Customer will be notified of the application's completeness. Interconnecting Customers who are not likely to qualify for Simplified or Expedited Process may opt to go directly into the Standard Process path. Interconnecting Customers proposing to interconnect on area networks will have their Interconnection Applications reviewed under the Simplified Process or the Standard Process, depending on the proposed Facility type and/or size as described in the Interconnection Tariff. All other Interconnecting Customers must proceed through a series of screens to determine their ultimate interconnection path. Interconnecting Customers who are not sure whether a particular location is on a radial circuit, spot network, or area network should check with the Company serving the proposed Facility location prior to filing an application and the Company will verify the circuit type.

3.1 Simplified Process – Radial Distribution Circuit

This Simplified Process is for interconnecting a Facility on a radial distribution circuit. To qualify for the simplified process, a Facility must:

- Use a Listed inverter;
- For interconnection on a single-phase secondary service from a single-phase transformer, where the Facility's Export Capacity, complying with Section 4.3, does not exceed 15 kW and its Nameplate Rating does not exceed 30 kW. If the Facility's Export Capacity is not limited, the Nameplate Rating cannot exceed 15 kW.
- For interconnection on a three-phase secondary service from a three-phase transformer, where the Facility's Export Capacity, complying with Section 4.3, does not exceed 25 kW and its Nameplate Rating does not exceed 50 kW. If the Facility's Export Capacity is not limited, the Nameplate Rating cannot exceed 25 kW.

~~This process is for Interconnecting Customers using Listed single-phase inverter-based Facilities with power ratings of 15 kW or less at locations receiving single-phase secondary service from a single-phase transformer, or using Listed three-phase inverter-based Facilities with power ratings of 25 kW or less at locations receiving three-phase secondary service from a three-phase transformer configuration, and requesting an interconnection on radial EPSs where the aggregate generating Facility capacity is less than 15% of feeder/circuit annual peak load and, if available, line segment. This is the fastest and least-costly interconnection path.~~

The Simplified Process for Radial Distribution Circuits is as follows:

a) Application process:

i) Interconnecting Customer submits a Simplified Process application filled out properly and completely (Exhibit A).

ii) Company acknowledges to the Interconnecting Customer receipt of the application within 3 Business Days of receipt.

iii) Company evaluates the application for completeness and notifies the Interconnecting Customer within 10 Business Days of receipt that the application is or is not complete and, if not, advises what is missing.

b) Company completes review of all screens. When the Company verifies Facility equipment passes Screens 1, 2, 3, 4, and 5 in Figure 1 if a radial EPS, the project shall follow the Simplified Process. If a Facility fails Screen #5 in Figure 1, the Facility shall not be automatically evaluated under the Expedited Process. The Company shall have 20 Business Days to review an application where the Facility has failed screen #5 in Figure 1.

c) If approved, the Company signs the application approval line and sends to the

Interconnecting Customer. In certain rare circumstances, the Company may require the Interconnecting Customer to pay for minor System Modifications. If so, a description of work and an estimate will be sent back to the Interconnecting Customer for approval. The Interconnecting Customer would then approve via a signature ~~and payment for the minor System Modifications. If the Interconnecting Customer approves, the Company performs the System Modifications~~. Then, the Company signs the application approval line and sends to the Interconnecting Customer. The Company signature on the application approval line constitutes a Conditional Approval to Interconnect. Once the Interconnecting Customer makes payment for the minor System Modification, the Company then performs the System Modification.

d) Upon receipt of the signed application, the Interconnecting Customer installs the Facility. Then the Interconnecting Customer arranges for inspection of the completed installation by the local electrical wiring inspector, or other authority having jurisdiction, and this person signs the Certificate of Completion. If the Facility was installed by an electrical contractor, this person also fills out the Certificate of Completion.

e) The Interconnecting Customer returns the Certificate of Completion to the Company (refer to Attachment 2 of the Simplified Process Application for the Certificate of Completion).

f) Following receipt of the Certificate of Completion, the Company may inspect the Facility for compliance with its standards by arranging for a Witness Test. The Company is obligated to complete this Witness Test within 10 Business Days of the receipt of the Certificate of Completion. If the Company does not inspect in 10 Business Days or by mutual agreement of the Parties, the Witness Test is deemed waived.

g) Assuming the wiring inspection, all Compliance Documentation and/or Witness Test are satisfactory, the Company notifies the Interconnecting Customer in writing that interconnection is authorized and issues the Authorization to Interconnect. If the wiring inspection, Compliance Documentation and/or Witness Test are not satisfactory, the Company has the right to disconnect the Facility, and will provide information to the Interconnecting Customer describing clearly what is required to receive the Authorization to Interconnect. The Company shall issue the Authorization to Interconnect within 5 Business Days from the Interconnecting Customer's satisfaction of the connection requirements (i.e. the wiring inspection, all Compliance Documentation, and the Witness Test) and the Company's installation of the required meter, whichever occurs later. The Interconnecting Customer has no right to operate in parallel until they have received the Authorization to Interconnect.

If the Interconnecting Customer does not substantially complete construction within 12 months after receiving the Conditional Approval to Interconnect from the Company, the Company will require the Interconnecting Customer to reapply for interconnection. Notwithstanding the foregoing, the Interconnecting Customer's obligation to complete construction within 12 months is subject any claim of

Force Majeure made by the Interconnecting Customer in accordance with, and subject to the limitations of, Section 3.7.

3.1.1 Simplified Process – Networks

~~This process is for Interconnecting Customers using Listed inverter based Facilities where the aggregate generating Facility capacity is less than one fifteenth of the Interconnecting Customer's minimum load and requesting an interconnection on a Spot or Area Network. For Interconnecting Customers interconnecting on an Area Network, the power rating of the Listed inverter must be 15 kW or less. This is the fastest and least costly interconnection path for interconnection on a network.~~

This Simplified Process tis for interconnecting a Facility on a spot or area network. To qualify for this Simplified Application process, a Facility must:

- Use a Listed inverter.
- Have the Company confirm:
  - The existing service, transformer, and network protector(s) are adequate to interconnect the proposed DER Nameplate Rating.
  - The existing network protector(s) can accommodate reverse power.
  - For area networks, the total area network interconnected and proposed DER capacity (including this project) is less than 15% of the minimum load of the network.
  - For spot networks, the total local network interconnected and proposed DER capacity (including this project) is less than 50% of the minimum load on the transformer(s) in the area.

The Simplified Process for Networks is as follows:

a) Application process:

i) Interconnecting Customer submits a Simplified Process application filled out properly and completely (Exhibit A).

ii) Company acknowledges to the Interconnecting Customer receipt of the application within 3 Business Days of receipt.

iii) Company evaluates the application for completeness and notifies the Interconnecting Customer within 10 Business Days of receipt that the application is or is not complete and, if not, advises what is missing.

b) Company completes review of all applicable screens in Figure 2. For proposed facilities

on a Spot Network, Screen 3 is not required for the review and should be bypassed. When the Company verifies Facility equipment passes all applicable Screens in Figure 2, the project shall follow the Simplified Process. The determination of minimum load is critical when connecting to network distribution systems. If the Interconnecting Customer minimum load is known, the Company shall have 30 Business Days to review an application. If there is no existing meter or the existing metering in place cannot be used to determine the minimum load, then a meter capable of recording minimum loads must be installed at the Interconnecting Customer's expense. In such cases, the Company may install an interval meter to measure 3 months of continuous customer load capturing the annual minimum load. Notwithstanding the foregoing, if the Interconnecting Customer has another type of power monitoring equipment installed at the Facility that is capable of providing minimum loads satisfactory to the Company, an interval meter would not be required. In addition, if the Company has another type of power monitoring equipment that can be installed, either at the Facility or off-site, that is capable of providing minimum loads, an interval meter will not be required. The maximum time the interval metering (or other Company approved monitoring equipment) will be used to measure the minimum load is 9 months from the point of the time the analysis was commenced. The Company can remove the interval meter at the Interconnecting Customer's expense if the Interconnecting Customer requests its removal provided the interval meter is not required for the rate the Customer takes service on when the generation Facility is installed.

c) If approved, the Company signs the application approval line and sends to the Interconnecting Customer. In certain rare circumstances, the Company may require the Interconnecting Customer to pay for minor System Modifications. If so, a description of work and an estimate will be sent back to the Interconnecting Customer for approval. The Interconnecting Customer would then approve via a signature and payment for the minor System Modifications. If the Interconnecting Customer approves, the Company performs the System Modifications. Then, the Company signs the application approval line and sends to the Interconnecting Customer. The Company signature on the application approval line constitutes a Conditional Approval to Interconnect.

d) Upon receipt of the signed application, the Interconnecting Customer installs the Facility. Then the Interconnecting Customer arranges for inspection of the completed installation by the local electrical wiring inspector, or other authority having jurisdiction, and this person signs the Certificate of Completion. If the Facility was installed by an electrical contractor, this person also fills out the Certificate of Completion.

e) The Interconnecting Customer returns the Certificate of Completion to the Company (refer to Attachment 2 of the Simplified Process Application for the Certificate of Completion).

f) Following receipt of the Certificate of Completion, the Company may inspect the Facility for compliance with its standards by arranging for a Witness Test. The Company is obligated to complete this Witness Test within 10 Business Days of the receipt of the

Certificate of Completion. If the Company does not inspect in 10 Business Days or by mutual agreement of the Parties, the Witness Test is deemed waived.

g) Assuming the wiring inspection, all Compliance Documentation and/or Witness Test are satisfactory, the Company notifies the Interconnecting Customer in writing that interconnection is authorized and issues the Authorization to Interconnect. If the wiring inspection, Compliance Documentation and/or Witness Test are not satisfactory, the Company has the right to disconnect the Facility, and will provide information to the Interconnecting Customer describing clearly what is required to receive the Authorization to Interconnect. The Company shall issue the Authorization to Interconnect within 5 Business Days from the Interconnecting Customer's satisfaction of the connection requirements (i.e. the wiring inspection, all Compliance Documentation, and the Witness Test) and the Company's installation of the required meter, whichever occurs later. In addition, the Interconnecting Customer will be required to have a load monitoring system in place to prevent the 1/15th minimum load from being exceeded pursuant to Section 6.3 and to provide annual test results of the system pursuant to Section 6.4.3.The Interconnecting Customer has no right to operate in parallel until they have received the Authorization to Interconnect.

If the Interconnecting Customer does not substantially complete construction within 12 months after receiving the Conditional Approval to Interconnect from the Company, the Company will require the Interconnecting Customer to reapply for interconnection.

3.2 Pre-Application Reports

Prior to submitting an Interconnection Application through either the Expedited or Standard Process (see Sections 3.3 and 3.4), all Interconnecting Customers ~~with~~ seeking to interconnect Facilities ~~that are~~with an Export Capacity of 500kW or greater must request and receive a Pre-Application Report from the Company. The Pre-Application Form is located in Exhibit B. The Pre-Application Report is optional ~~at the election of the~~ for Interconnecting ~~Customer for those~~Customers seeking to interconnect Facilities ~~that are~~with an Export Capacity less than 500kW. There is no fee for either a mandatory or optional Pre-Application Report.

Commented [A9]: These proposed changes are to clearly define what "capacity" should be used to determine the Pre-Application Report requirements. We believe that Export Capacity (instead of Nameplate) is appropriate for the requirement.

Following the submission for either a mandatory or optional Pre-Application Report, the Company shall provide the Report within 10 Business Days. The Pre-Application Report produced by the Company is non-binding, and the Interconnecting Customer must still successfully apply to interconnect to the Company's EPS.

The Company shall provide the following information for the proposed Facility interconnection location in the Pre-Application Report:

1) Circuit voltage at the substation;
2) Circuit name;
3) Circuit voltage at proposed Facility;

4) Whether Single or three phase is available near site;
5) If single phase – distance from three phase service;
6) Aggregate connected Facilities (kW) on circuit;
7) Submitted complete applications of Facilities (kW) on circuit that have not yet been interconnected;
8) Whether the Interconnecting Customer is served by an area network, a spot network, or radial system;
9) Identification of feeders within ¼ mile of the proposed interconnection site through a snap-shot of GIS map or other means;
~~9)~~10) 8760 hour load profile (showing peak and minimum load) for the circuit and line segment (if available without violating customer privacy rules), and
~~10)~~11) Other potential system constraints or critical items that may impact the proposed Facility.

3.3 Expedited Process

Other Interconnecting Customers not qualifying for the Simplified Process or not in the Standard Process must pass a series of screens before qualifying for Expedited interconnection. Depending on whether one or more screens are passed, additional steps may be required.

The Expedited Process is as follows:

a) Application process:

i) Interconnecting Customer submits an Expedited/Standard application, including any associated attachments, filled out properly and completely (Exhibit C). The Company shall review the project in accordance with the design established in the Interconnection Application, including any Operating Schedule that has been specified so long as it adequately identifies the control methods used in accordance with Section 4.3.

ii) Company acknowledges to the Interconnecting Customer receipt of the application within 3 Business Days of receipt.

iii) Company evaluates the application for completeness and notifies the Interconnecting Customer within 10 Business Days of receipt that the application is or is not complete and, if not, advises what is missing.

b) Company then conducts a complete review of all screens, which includes applying the screening methodology (Screens 1 through 10 in Figure 1).

The Company reserves the right to conduct internal studies if necessary and at no additional cost to the Interconnecting Customer, such as but not limited to: protection review, aggregate harmonics analysis review, aggregate power factor review and voltage regulation

Commented [A10]: As identified in the JESS comments, there is a need for applicants to be able to access better information about the grid to help design project sites appropriate for the grid location. We prefer this be provided through a hosting capacity map. In the meantime the EDCs should at least provide a load profile through the pre-application report.

Commented [A11]: This language was not included in the consensus draft because the group did not have a comprehensive discussion of the use of operating schedules. We believe it should be clear in each section that the Application will be reviewed taking into account the export controls being used and any Operating Schedule that is proposed.

review. Likewise, when the proposed interconnection may result in reversed load flow through the Company's load tap changing transformer(s), line voltage regulator(s), control modifications necessary to mitigate the effects may be made to these devices by the Company at the Interconnecting Customer's expense or the Facility may be required to limit its output so reverse load flow cannot occur or to provide reverse power relaying that trips the Facility.

c) As part of the Expedited Process, the Company will assess whether any System Modifications are required for interconnection, even if the project passes all of the applicable Screens. If the needed modifications are minor, that is, the requirement can be determined within the time allotted through the application fee and any internal studies, then the modification requirements, reasoning, and costs for these minor modifications will be identified and included in the executable Interconnection Service Agreement.

If the requirements cannot be determined within the time and cost allotted in the initial review and any internal studies, the Company may require that the project undergo a Supplemental Review that determines System Modifications, but does not require review of the Supplemental Review Screens A-C as described in Figure 1, Note 8. The Company will provide a Supplemental Review Agreement (Exhibit D). The time allocated for Supplemental Review is a maximum of 30 hours of engineering time. In all cases, the Interconnecting Customer will pay for the cost of modifications as discussed in Section 5.0.

d) Assuming all applicable Screens are passed and System Modifications have been determined in accordance with Section 3.3(c) above, if applicable, the Company sends, within 10 Business Days, the Interconnecting Customer an executable Interconnection Service Agreement, which will include a quote for any required System Modifications and/or reasonable Witness Test costs, and a construction schedule for any required System Modifications.

e) If one or more Screens are not passed, the Company shall provide, in writing, the specific Screen(s) that the Application failed, including the technical reason for failure. The Company shall provide information and detail about the specific system threshold or limitation causing the Application to fail the Screen. Along with the Screen results, the Company will provide a Supplemental Review Agreement (Exhibit D~~); however, the~~). The Interconnecting Customer may choose to either: (1) return the Supplemental Review Agreement and proceed with Supplemental Review; (2) elect to go directly to an Impact Study in the Standard Process~~.~~; or (3) revise the Interconnection Application to address the specific Screen(s) that failed.

If the Interconnecting Customer chooses option (3) above to revise the Interconnection Application to address the specific Screen(s) that failed, the Interconnecting Customer

must submit updated application materials demonstrating the redesign within 10 Business Days of receiving the screen results from the Company; provided, however, that such redesign shall not include an increase in Nameplate Rating or Export Capacity, and shall not include a change in the proposed location of the Facility. Increases in Nameplate Rating or Export Capacity, or changes in Facility location shall require a new Interconnection Application and associated fees. All other proposed redesigns shall be considered under the existing Interconnection Application. The Company will conduct another complete review of all screens for this revised application, which includes applying the screening methodology (Screens 1 through 10 in Figure 1) based on the revised Interconnection Application. This option shall only be available one time during the screening phase of the Expedited Process. ~~If one or more Screens are not passed, the Company will provide a Supplemental Review Agreement (Exhibit D); however, the Interconnecting Customer may elect to go directly to an Impact Study in the Standard Process.~~

If the Interconnecting Customer executes the Supplemental Review Agreement, the Company will conduct the review within 20 Business Days. If the Supplemental Review determines the requirements for processing the application through the Expedited Process including any System Modifications, then the Company will offer an executable Interconnection Service Agreement that identifies System Modification requirements, reasoning, and costs for these modifications as defined in Section 5.0, as well as a construction schedule for such modifications. If the Supplemental Review does not determine the requirements, it will include a proposed Impact Study Agreement as part of the Standard Process which will include an estimate of the cost of the study. Even if a proposed project initially fails a particular Screen in the Expedited Process, if Supplemental Review shows that it can return to the Expedited Process then it will do so. Supplemental Review includes up to 30 hours of engineering time.

~~e)~~f) If an Interconnection Application fails the Supplemental Review, the Company shall provide, in writing, the specific Screen(s) that the Application failed, including the technical reason for failure, and the data and the analysis supporting the Supplemental Review. The Company shall provide information and detail about the specific system threshold or limitation, preventing determination of required System Modifications without further study. The the Company shall provide the Interconnecting Customer the option to participate in a Supplemental Review results meeting. Within 5 Business Days of the Interconnecting Customer's request for a Supplemental Review results meeting, the Company shall contact the Interconnecting Customer and offer to convene a meeting at a mutually acceptable time to review the Supplemental Review screen analysis and related results to determine what modifications, if any, may permit the Facility to be connected safely and reliably without requiring the Interconnection Application to be reviewed in the Standard Process, including conducting an Impact Study.

g) ~~The~~Within 5 Business Days of either receiving the Supplemental Review results or the results of the meeting (if requested), Interconnecting Customer shall notify the Company whether it wishes to withdraw its Interconnection Application, proceed to an Impact Study, or redesign the project based on the Supplemental Review and results of the meeting. If the Interconnecting Customer wishes to redesign the project to mitigate the identified impacts, it shall provide the Company with updated application materials demonstrating the redesign within 15 Business Days of receiving the Supplemental Review results. If a new application with a revised design or an executed Impact Study Agreement for the original proposed design is not received within 15 Business Days, the application will be deemed withdrawn. The Company shall notify the Interconnecting Customer if the redesign addresses the concerns and allows the project to proceed with the process in Section 3.3(d) above within 20 Business Days from receipt of the updated materials. If the redesign does not address the concerns, the Company shall notify the Interconnecting Customer and provide the option of proceeding to an Impact Study or to withdraw the Interconnection Application.

~~f)~~h) If the Interconnection Application passes either the required Screens, or Supplemental Review ~~or is modified to enable passage~~, the Company will provide the Interconnecting Customer with an Interconnection Service Agreement for signature. Time Frames for signing the Interconnection Service Agreement are specified in Section 3.6.2. Once the Interconnecting Customer signs and returns the Interconnection Service Agreement, it is then counter-signed and dated by the Company.

~~g)~~i) If the Interconnecting Customer executes the Interconnection Service Agreement, the Interconnecting Customer will pay costs associated with System Modifications in accordance with the time frames specified in Section 3.6.2.

~~h)~~j) Interconnecting Customer completes installation and, upon receipt of payment in full, the Company completes System Modifications, if required, within the mutually agreed upon Time Frame provided in the System Modifications construction schedule in the Interconnection Service Agreement.

~~i)~~k) Interconnecting Customer sends Certificate of Completion to Company. See Attachment 2 of the Interconnection Application.

~~j)~~l) Following receipt of the Certificate of Completion, the Company may inspect the Facility for compliance with standards by arranging for a Witness Test. The Company is obligated to complete this Witness Test within 10 Business Days of the receipt of the Certificate of Completion, and if required, Company-approved Witness Test procedure. If the Company does not inspect in 10 Business Days or by mutual agreement of the Parties, the Witness Test is deemed waived.

~~k)~~m) Assuming the wiring inspection, all Compliance Documentation and/or Witness Test are satisfactory, the Company notifies the Interconnecting Customer in writing that interconnection is authorized and issues the Authorization to Interconnect. If the wiring inspection, Compliance Documentation and/or Witness Test are not satisfactory, the Company has the right to disconnect the Facility, and will provide information to the Interconnecting Customer describing clearly what is required to receive the Authorization to Interconnect. The Company shall issue the Authorization to Interconnect within 5 Business Days from the Interconnecting Customer's satisfaction of the connection requirements (i.e. the wiring inspection, all Compliance Documentation, and the Witness Test) and the Company's installation of the required meter, whichever occurs later. The Interconnecting Customer has no right to operate in parallel until they have received the Authorization to Interconnect.

~~l)~~n) An Interconnecting Customer's Interconnection application may only be moved from the Expedited Process to the Standard Process if the initial Interconnection Application, and any revised Interconnection ~~a~~Applications submitted in accordance with Section 3.3(e) or 3.3(g), above, fails a Screen in Figure 1 or 2 or the Supplemental Review of an application that failed a Screen in Figure 1 or 2 exceeds 30 hours of engineering time, or the Interconnecting Customer elects to go directly to the Standard Process.

3.4 Standard Process

The Standard Process has the longest maximum time period and highest potential costs. There are three ways to enter the Standard Process:

a) Interconnecting Customers may choose to proceed immediately to the Standard Process. Application process:

i) Interconnecting Customer submits an Expedited/Standard Application ~~filled out properly and completely (Exhibit C),~~ including any associated attachments, filled out properly and completely (Exhibit C). The Company shall review the project in accordance with the design established in the Interconnection Application, including any Operating Schedule that has been specified so long as it adequately identifies the control methods used in accordance with Section 4.3.

ii) Company acknowledges to the Interconnecting Customer receipt of the application within 3 Business Days.

iii) Company evaluates the application for completeness and notifies the Interconnecting Customer within 10 Business Days of receipt that the application is or is not complete and, if not, advises what is missing.

b) Based upon the results of the initial and Supplemental Reviews, Interconnecting Customers

Commented [A12]: The working group did not have time to discuss changes to the standard process, nor was there an opportunity to discuss operating schedules more comprehensively. We have described the need for the following changes in our comments.

Commented [A13]: This is intended to reference the energy storage questionnaire.

may be required to enter the Standard Process.

c) Based on the results of the Screens in Figure 2 for networks, Interconnecting Customers may be required to enter the Standard Process.

The Standard Process is as follows:

a) The Company will conduct an initial review, which may include if requested, a scoping meeting/discussion with the Interconnecting Customer to review the application. From the initial review, the Company will provide pertinent information such as:

- The available fault current at the proposed location;
- The existing peak and minimum loading and hours of the peak and minimum loading on the lines in the general vicinity of the Facility;
- The configuration of the distribution lines;
- If the application is subject to the Pre-Application Report requirement in Section 3.2, the Pre-Application Report may, as necessary, be discussed at the initial review.

Commented [A14]: This information would help customers determine the appropriate system design and schedule.

b) Company provides an Impact Study Agreement, including a cost estimate for the study. Where there are other potentially Affected Systems, and no single Party is in a position to prepare an Impact Study covering all potentially Affected Systems, the Company will coordinate but not be responsible for the timing of any studies required to determine the impact of the interconnection request on other potentially Affected Systems. The Interconnecting Customer will be directly responsible to the potentially Affected System operators for all costs of any additional studies required to evaluate the impact of the interconnection on the potentially Affected Systems. To the extent any studies or System Modifications are required, all associated agreements will be between the Affected System operator and the Interconnecting Customer. The Time Frames in Tables 1 through 5 will be affected if ISO-NE determines that a system Impact Study is required. This will occur if the Interconnecting Customer's Facility is, or group of facilities are, equal to or greater than 5 megawatts ("MW") and may occur if the Interconnecting Customer's Facility is greater than 1 MW.

Commented [A15]: This appears to be referencing an ISO-NE rule so we have not modified. We note, however, that it would be preferable to identify whether this is the Export Capacity or Nameplate Rating.

~~c)~~ Once the Interconnecting Customer executes the Impact Study Agreement and pays pursuant to the terms thereof, the Company will conduct the Impact Study.

c) The Company shall evaluate whether the proposed Facility has a potential to cause ~~'s potential~~ system impacts taking into account the Operating Schedule and design specifications identified in the application and supporting materials. If the proposed Facility utilizes export controls acceptable under Section 4.3 the Company shall distinguish between the Facility's Export Capacity and Nameplate Rating in the impact assessment. When conducting the Impact Study, if a threshold is violated or a potential

impact is identified, the Company shall attempt to identify the boundaries of the issue (i.e. the thermal limits of the equipment, the exact hours of the violation, the thresholds during those hours, or the degree of the violation) so that it can provide results to the applicant that may enable the applicant to determine if those impacts can be mitigated with ~~reasonable~~ changes to the proposed Facility.

d) The Impact Study results that are provided to the Interconnecting Customer should provide detailed information on the impacts identified (if any), the drivers and reasons for those impacts, including load, voltage, thermal and other limitations as well as ~~the timing for those limitations~~the boundaries of the impacts to the extent possible. ~~, and information on mitigations that the Interconnecting Customer may implement to resolve those impacts without needing System Modifications. Mitigations may include, but are not limited to, reducing the Export Capacity of the project through re-sizing, the use of an Energy Storage System to manage exports, changing the Operational Profile~~Operating Schedule of the Facility, ~~or the use of smart inverter capabilities.~~ If the Interconnection Customer does not wish to redesign the project or alter the ~~Operational Profile~~Operating Schedule, it shall notify the Company whether it wishes to withdraw or proceed to a Detailed Study within 5 Business Days of receiving the Impact Study results. If the Interconnecting Customer wishes to redesign the project or alter the Operational Profile to mitigate the identified impacts, it shall provide the Company with updated application materials demonstrating the redesign within 15 Business Days of receiving the Impact Study. The Company will evaluate the redesign and determine whether it ~~shall notify the Interconnecting Customer if the redesign~~ addresses the need for System Modifications and notify the Interconnecting Customer within 5 Business Days if the issues are resolved or whether further study is need to make that determination. If resolved, the Impact Study shall be updated to reflect the changes within 10 Business Days from receipt of the updated materials. If further study is needed, the Company shall complete that study and provide it to the Interconnecting Customer within 20 Business Days. ~~If resolved, the Impact Study shall be updated to reflect the changes within 10 Business Days from receipt of the updated materials~~I. ~~I~~f the Company concludes at either point that the redesign does not address the concerns, the Company shall notify the Interconnecting Customer and provide the option of proceeding with a Detailed Study.

~~d)~~e) If the Interconnecting Customer has not yet selected the generation equipment, the Interconnecting Customer has the right to ask the Company to perform an Impact Study for up to three options of the same generation type and location. However, the cost of the Impact Study will increase in accordance with the complexity of the requested options. Also, the Time Frame for the Impact Study will revert to a mutually agreed upon duration but not to exceed an additional one-third of the allowable Time Frame for each additional option.

~~e)~~f) If the Company determines, in accordance with Good Utility Practice, that the System

Modifications to the Company EPS are not substantial, the Impact Study will determine the scope and cost of the modifications as defined in Section 5.0. If the Company determines, in accordance with Good Utility Practice, that the System Modifications to the Company EPS are substantial, the Impact Study will produce an estimate for the modification costs (within ±25%) and a Detailed Study Agreement and cost for Interconnecting Customer's approval.

~~f)~~g) Within the Standard Process are extended Time Frames applicable to Complex Facility Interconnection Applications that will require extensive System Modifications. The Company will inform the Interconnecting Customer within 20 days following the commencement of the Impact study whether the Interconnection Application shall be treated as a Complex Project under the Standard Process.

~~g)~~h) At the conclusion of the Impact Study, an Interconnecting Customer may request and sign an Interconnection Service Agreement. If an Interconnecting Customer chooses to sign an Interconnection Service Agreement following the conclusion of the Impact Study, the Interconnecting Customer agrees to be bound by the ±25% System Modification costs identified in the Impact Study (see 3.4(a)-(e) above). The Company will not be required to provide a construction schedule until after it completes the Detailed Study.

~~h)~~i) Once the Interconnecting Customer executes the Detailed Study Agreement and pays pursuant to the terms thereof, the Company will conduct the Detailed Study.

~~i)~~j) Upon completion of any necessary studies and in the event that the Interconnecting Customer did not exercise the early Interconnection Service Agreement option above, the Company shall send the Interconnecting Customer an executable Interconnection Service Agreement, which will include a quote for any required System Modifications and reasonable Witness Test costs as well as a construction schedule.

~~j)~~k) The Company will provide the Interconnecting Customer with an Interconnection Service Agreement for signature. Time Frames for signing the Interconnection Service Agreement are outlined in Section 3.6.2. Once the Interconnecting Customer signs and returns the Interconnection Service Agreement, it is then counter-signed and dated by the Company.

~~k)~~l) If the Interconnecting Customer executes the Interconnection Service Agreement, the Interconnecting Customer will pay costs associated with System Modifications in accordance with the time frames specified in Section 3.6.2.

~~l)~~m) The Interconnecting Customer completes installation and the Company, upon receipt of payment in full, completes any required System Modifications within the mutually agreed upon Time Frame provided in the construction schedule in the Interconnection Service Agreement or Detailed Study as applicable.

~~m)~~n) Interconnecting Customer sends Certificate of Completion to Company. See Attachment 2 of the Interconnection Application.

~~n)~~o) Company inspects completed installation for compliance with requirements. The Company shall require a Witness Test of the Facility as approved by the Company. The Interconnecting Customer will provide a proposed Witness Test and all requisite supporting documentation for review by the Company once the Interconnecting Customer has completed the installation of the Facility. Once all requisite information has been provided by the Interconnecting Customer, the Company shall have 8 Business Days to approve the Interconnecting Customer's proposed Witness Test. The Company shall then inform the Interconnecting Customer when it has approved the Witness Test procedures. Once the Witness Test has been approved by the Company, the Interconnecting Customer will call the Company to arrange for the Witness Test. The Company is obligated to complete this Witness Test within 10 Business Days or by mutual agreement upon receipt of the Interconnecting Customer's proposed Witness Test.

~~o)~~p) Assuming the wiring inspection, all Compliance Documentation and/or Witness Test are satisfactory, the Company notifies the Interconnecting Customer in writing that interconnection is authorized and issues the Authorization to Interconnect. If the wiring inspection, Compliance Documentation and/or Witness Test are not satisfactory, the Company has the right to disconnect the Facility, and will provide information to the Interconnecting Customer describing clearly what is required to receive the Authorization to Interconnect. The Company shall issue the Authorization to Interconnect within 5 Business Days from the Interconnecting Customer's satisfaction of the connection requirements (i.e. the wiring inspection, all Compliance Documentation, and the Witness Test) and the Company's installation of the required meter, whichever occurs later. The Interconnecting Customer has no right to operate in parallel until they have received the Authorization to Interconnect.

3.4.1 Group Study Process

a) This section shall be in effect for a period of 12 months commencing June 1, 2015 (the "Pilot Period"). Any duties or obligations of either the Company or an Interconnecting Customer associated with a Group Study that arise during the Pilot Period shall remain in effect after the Pilot Period, subject to the Company's Interconnection Tariff and Terms and Conditions for Distribution Service in effect from time to time.

b) As appropriate, the Company shall require that an Interconnecting Customer within the Common Study Area participate in the Group Study whenever a Group exists. The Company shall invite all potential Group members to a Group Study scoping meeting to discuss the feasibility of the Group Study after the initial or screening reviews have been completed for all potential Group members. The application receipt and review, and all

screening reviews, for each potential Group member is subject to the applicable Time Frames set forth in the Tariff, Tables 1 to 5, as applicable. The Company may also, in its sole judgment, conduct a study for an Interconnecting Customer separate from the Group Study to the extent warranted by Good Utility Practice.

c) If any Interconnecting Customer within the Common Study Area wishes to continue in the application process outside of a Group or are removed from a Group because of non-conformance with Time Frames or other Group Study Process requirements, that Interconnecting Customer's' Facility shall be studied after the completion of the Group Study (or the study of the individual applicant that chose to remain within the Group), even if the Interconnecting Customer that was removed from the Group applied before the remaining Group member(s).

d) Each member of the Group shall pay a percentage of the Group Study cost on the basis of applied capacity (in MW AC of aggregated system design capacity for each applicant's Facility).[3] If a member ceases to belong to the Group, any contributions to the Group Study cost from that member shall be non-refundable. Time Frames for completion of Group Studies shall be by mutual agreement.

e) The Company may reassess study costs subsequent to a change in composition of the Group and any increase in Group Study costs must be paid by the remaining Group members.

f) A Group Study may only commence after completion of the Preceding Study that was in-process when the Group was formed and all members of the Group have met the prerequisites for commencement of an Impact Study. The Preceding Study is the Impact Study that was in process when the Group was formed, so the Time Frame for the Preceding Study is the same Time Frame applicable for the underlying Impact Study. Thereafter, the Time Frames are by mutual agreement with the parties. No Time Frame extensions shall be allowed for any Group member unless all Group members agree to the extension in writing. Should any Group member not comply with its Time Frame requirements, the member shall be removed from the Group.

g) The Group Study shall be performed such that System Modifications (whether shared or individual) and associated costs shall first be determined for the entire Group, along with the allocated costs for each member of the Group. Generally, subsequent to studying the impacts and System Modification requirements of the entire Group, the same study approach shall be performed in iterations for the Group with the latest applicant in the Group removed from consideration. However, if all Group members mutually agree in the

[3] Any scope and costs of ISO New England studies shall be considered to be separate from the scope and costs of a Group Study. Each Facility included in the Group may be subject to additional ISO-NE requirements, compliance with which is the responsibility of the Interconnecting Customer.

scoping meeting, the Company may limit the scope of the Group Study to particular iterations of the composition of the Group.

h) Once all iterations of the Group Study are complete, the Group Study report shall be distributed to the Group, and the Group member(s) shall decide whether to proceed through the remainder of the interconnection process. Earlier applicants within the Group shall have precedence over later applicants if earlier applicants are able to modify their applications that obviate the need for significant distribution modifications for their modified projects. To the extent that a change to the Group composition requires additional studies, the remaining Group member(s) shall pay their cost, and the completion date of the revised study shall be re-estimated by the Company.

i) Cost allocations shall be assessed on the basis of applied capacity (in MW AC of aggregated system design capacity for each applicant's Facility) for the portion of System Modifications associated with the Group Study that benefit multiple Group member(s). This shall pertain to both Detailed Study and construction costs. The cost for Detailed Studies and System Modifications that are not common shall be the sole responsibility of the Group member(s) for whom the System Modifications are required. The Company shall not commence any work on Detailed Studies associated with common System Modifications until full payment is received from all affected Group member(s) for the studies. The Company shall not commence any work on construction associated with common System Modifications until full payment is received from all affected Group member(s) for the System Modifications. System Modifications costs associated with the Group Study shall be subject to section 5.3 of the Interconnection Tariff.

j) The Group Study shall not be binding upon any member. To the extent that any Interconnecting Customers are no longer part of an on-going Group Study or submit applications after an on-going Group Study has commenced, the on-going Group Study shall be considered a Preceding Study.

k) A group of facilities on a common bus may be subject to additional requirements, including without limitation ISO-NE operating procedure OP-14. If the ISO-NE maintains that a group of facilities must be set up as a single modeled generator, each member of the group (i.e., each individual generator) must comply with these requirements. To the extent permitted under applicable ISO-NE requirements, group members may arrange for an alternative means of performing the duties required under OP-14. In all cases, it will be the group members' responsibility to determine what the individual ISO-NE requirements are, and the most efficient means to comply with those requirements (i.e., individually or collectively).

3.5 Time Frames

The Company and Interconnecting Customer will meet Time Frames for each step in the pertinent interconnection process. The Time Frames provided in this tariff represent a Company or Interconnecting Customer obligation of completion within the relevant Business Days in the Tariff beginning with the next Business Day following the completion of the prior step and concluding with the applicable deliverable in the tariff. All steps with a Time Frame represent a regulatory obligation of the Company where applicable and an Interconnecting Customer obligation to ensure maintaining their place in the interconnection process. Time Frames are subject to Force Majeure as provided in Section 3.7 and Parties' extensions as described in Section 3.6.2.

Unless otherwise noted, all Time Frames in the Interconnection Tariff reference Company Business Days. In addition, in the event information has been requested of the Interconnecting Customer, all application time keeping shall commence the next Business Day following receipt of information from the Interconnecting Customer.

~~If an Interconnecting Customer requests a project change during the interconnection process prior to the execution of the Interconnection Service Agreement, and if the Company determines the change is "significant", the Interconnecting Customer will be required to submit a new Interconnection Application with associated fees and the revised project shall be placed at the end of the project queue. If the Company determines the change results in "moderate" alterations to the project, the Interconnecting Customer will be required to resubmit their Interconnection Application with all updated information. For proposed changes with "moderate" impacts on the project, the Company shall determine whether additional fees are required. While the Interconnecting Customer will not have to reapply and start the Interconnection Application process over, the Company will reset the Study Time Frame to the beginning, but endeavor to complete the Study earlier than that allotted time. "Significant" and "moderate" shall be defined by the Company specific technical standards.~~

~~If the Interconnecting Customer requests that the Company study "significant" alternative equipment or changes the capacity of the interconnecting Facility that requires Company restudying, subsequent to an executed Interconnection Service Agreement, the Company and Interconnecting Customer will determine a mutually agreed to Time Frame and applicable fees/costs covered by the Interconnecting Customer. "Significant" shall be defined by the Company specific technical standards.~~

Commented [A16]: We recommend removing these two paragraphs regarding modifications. We have proposed a new section below (3.6) that should serve as a clearer policy for determining whether modifications are material and the process that is entailed in this determination.

Table 1 lays out the maximum Time Frames allowed under the Simplified Process. Table 2 lays out the maximum Time Frames allowed under the Expedited Process. Table 3 lays out the maximum Time Frames allowed under the Standard Process.

Table 4 lays out the maximum Time Frames allowed under the Standard Process for Projects deemed to be Complex Projects.

The Time Frame for each step is stopped when awaiting information from Interconnecting Customers. Any delays caused by Interconnecting Customer will interrupt the applicable Time Frame.

For the Expedited and Standard processes, if the Interconnecting Customer does not initiate construction

within twelve (12) months of signing the Interconnection Service Agreement, the Company may require the Interconnecting Customer to provide evidence that the project is moving toward construction. In the event that the Interconnecting Customer cannot provide such evidence, the Company reserves the right to require additional study or require the Interconnecting Customer to reapply for interconnection. Situations that could trigger enforcement of this time limit are: (1) material changes on the distribution circuits (e.g., load changes, circuit reconfiguration) or (2) a second application for interconnection received by the Company on a circuit from the same substation. The same rights of the Company to require the Interconnecting Customer to reapply for interconnection pertains if the Interconnecting Customer, after initiating construction, does not complete construction within twenty-four months. Notwithstanding these maximum Time Frames, the Company shall endeavor to meet the Interconnecting Customer's needs. However, the Company will be required to retain the work previously performed in order to reduce the initial and Supplemental Review costs incurred for a period of no less than 1 year.

3.6 Modification

3.6.1 The Interconnecting Customer may propose a Modification at any time before Parallel operation by submitting a request to the Company through the Company's on-line application portal or via email. Submission of such a Modification request will not suspend any deadlines applicable to the pending application.

3.6.2 The Company shall notify the Interconnecting Customer within 3 Business Days that the request is complete, or that the Company needs additional information to review the Modification. If the Company requests additional information within three days, that request shall identify the necessary additional information.

3.6.3 The Company shall review the request to determine whether the proposed Modification is a Material Modification and notify the Interconnection Customer of its determination within 7 Business Days of notifying the customer that the request is complete. If the Company determines that the Modification is a Material Modification, the notification shall include a written explanation, including the technical reason for the finding. The Company shall provide information and detail about the specific design element or impact causing it to find the Modification material. At the request of the Interconnecting Customer proposing the Modification, the Company will meet with the Interconnecting Customer to discuss its determination.

3.6.4 Within 5 business days after receiving a notification that the Modification is a Material Modification, the Interconnecting Customer shall either:

(a) withdraw the requested Modification and proceed with the project as proposed in the Interconnection Application;

(b) proceed with the Material Modification by submitting a new interconnection application and accepting a later queue position; or

(c) dispute the Company's determination that the Modification is a Material Modification in accordance with the dispute resolution provisions in Section 9 of this tariff.

3.6.5 A Modification not determined to be a material may still require evaluation and acceptance by the Company, and the Interconnecting Customer will be obligated to pay any necessary study costs. The Company will, within 5 Business Days of making the determination that more information and study is required, provide the Interconnecting Customer a study agreement and cost for the evaluation. The Interconnecting Customer shall have 10 Business Days to provide the requested information and funding or choose to withdraw the proposal for Modification.

(a) If the Modification request occurs prior to the start of the Impact Study and the evaluation of that Modification requires additional study, the evaluation of that Modification will be performed within that Impact Study.

(b) If the Modification request occurs during the first 40 Business Days of an Impact Study, the Company may have no more than an additional 10 Business Days to complete the Impact Study.

(c) If the Modification request occurs at a later date, or after the completion of the Impact Study, the Company may have no more than an additional 55 Business Days to complete the evaluation of the proposed Modification.

~~3.6~~3.7 Interconnection Application and Facility Construction Time Frame Management

~~3.6.1~~3.7.1 Initial Withdrawal Process (one time event within 2-3 months after DPU Order, D.P.U. 11-75-E issued on March 13, 2013)

For those Interconnecting Customers with Interconnection Applications pending on the effective date of these tariff revisions, at any stage in the Interconnection Application or Facility construction process, if a Company has not had contact with an Interconnecting Customer for more than 30 Business Days, the Company shall contact, via letter and email or telephone if the Company does not have an email address for the Interconnecting Customer, the Interconnecting Customer, alternative contact(s), and the most recent point of contact. The Company must note in this communication that, in the event the Interconnecting Customer does not contact the Company within 30 Business Days, the Interconnecting Customer's Interconnection Application will be considered withdrawn as authorized by the Department and that, if the Interconnecting Customer wished to pursue interconnection in the future, he/she would need to reapply. If the Interconnecting Customer responds, the Interconnection Application shall follow the On-Going Interconnecting Customer Time Frame Compliance set out below. If the Interconnecting Customer does not contact the Company within the allotted 30 Business Days, the Interconnection Application shall be considered withdrawn and, any fees paid shall not be refunded. However, the Company will be required to retain the work previously performed in order to reduce the initial and Supplemental Review costs incurred for a period of no less than 1 year.

~~3.6.2~~3.7.2 On-Going Interconnecting Customer Time Frame Compliance

A request from the Company to an Interconnecting Customer for information will allow the greater of 15 Business Days or half the allotted time within the step for the Interconnecting Customer to respond. A request from the Company to an Interconnecting Customer for a signature for any study agreement (i.e., Supplemental Review, Impact Study, or Detailed Study) will allow 15 Business Days for the Interconnecting Customer to respond. In the event that an Interconnecting Customer misses a deadline under the time allotted above, the Company shall notify the Interconnecting Customer via email of the missed deadline and that the Interconnecting Customer will be given 10 Business Days to cure the failure or request an extension. If the Interconnecting Customer requests an extension, he/she will be granted one extension equal to the length of the Time Frame for that step of the Interconnection Application or Facility construction process. Additionally, for non-solar Facilities, additional extensions for cause will be allowed pursuant to a mutual agreement between the Company and the Interconnecting Customer.

The following provisions regarding Time Frame extensions are solely applicable to Solar Facilities.

a) The Interconnecting Customer may request an additional extension period of 30 Business Days if the Interconnecting Customer cannot meet a request for information related to the engineering studies and reviews being performed by the Company within the relevant Time Frame because the information requested is held by a third party (i.e., equipment manufacturer) and such information cannot be obtained by the Interconnecting Customer despite reasonable efforts to do so. The Interconnecting Customer may request such an extension up to two times prior to the Company's provision of an Interconnection Service Agreement to the Interconnecting Customer or prior to the completion of the Detailed Study if the Interconnecting Customer elected to accelerate execution of the Interconnection Service Agreement pursuant to Section 3.4(g). There shall be no additional fee for an extension under this provision.

b) Once during the interconnection process, an Interconnecting Customer seeking to interconnect a Solar Facility may request an additional extension period of six months for legal challenges related to the Facility. The Interconnecting Customer shall submit a Certification that a governmental permit or approval for the Facility is subject to a pending legal challenge prior to the Time Frame deadline or during the initial Time Frame extension period described above. This additional extension period for legal challenges terminates at the end of the legal challenge or six months after the first day of this additional extension period, whichever comes first. There shall be no additional fee for an extension under this provision.

c) Once during the interconnection process, an Interconnecting Customer of a Public Facility seeking to interconnect a Solar Facility may request an additional extension period of six months by certifying to the Company that one or more of the following situations exists: (1) a town meeting vote is required for the Public Facility; (2) special legislation is required in relation to the Public Facility; or (3) any approval for the Public Facility is necessary under Article 97 of the Massachusetts Constitution. The additional extension period for

Public Facilities shall terminate at the end of the governmental process specified above or six months after the first day of the additional extension period for Public Facilities, whichever comes first. There shall be no additional fee for an extension under this provision. Pursuant to this provision, Certification shall consist of a written statement based on knowledge, information, and belief that the relevant claims are true.

In the event that the Interconnecting Customer requests an extension by one of the methods described above within 1/3 of the expiration of the end of a step Time Frame, the Company shall receive an additional number of days to complete the step, equal to 1/3 of the total Company Time Frame for that step in the Interconnection Application, to complete its obligations. Notwithstanding the foregoing, all Time Frames may be extended by mutual agreement.

The Company shall track all extensions granted under this Section.

In the event that an Interconnecting Customer fails to meet his/her obligations under the Time Frame extensions, the Interconnection Application shall be considered withdrawn, and, if the Interconnecting Customer determines to move forward, he/she would need to reapply for interconnection. Any fees paid shall not be refunded.

Interconnecting Customers will have 20 Business Days to sign an Interconnection Service Agreement provided by the Company or provide comments to the Company on the Interconnection Service Agreement, or the Interconnection Application shall be considered withdrawn and the Interconnecting Customer would need to reapply for interconnection. Further, any fees paid will not be refunded. If the Interconnecting Customer provides comments, the Interconnecting Customer and the Company will have 30 Business Days to resolve issues presented in the comments. After 30 Business Days, if there is no resolution and no request from the Interconnecting Customer for ADR, the Interconnection Application will be considered withdrawn and the Interconnecting Customer would need to reapply for interconnection. Any fees paid will not be refunded.

Interconnecting Customers shall not be required to pay any costs related to Company infrastructure upgrades or System Modifications upon execution of the Interconnection Service Agreement (or once the Interconnecting Customer receives the construction schedule). Interconnecting Customers shall have 120 Business Days from the date of execution of an Interconnection Service Agreement to pay 25 percent of those costs. If an Interconnecting Customer pays such cost within the 120 Business Day Time Frame, the Interconnecting Customer shall have an additional 120 Business Days from the date of first payment to pay the remainder of the costs. Construction estimates are valid for 60 Business Days from when they are delivered to the Interconnecting Customer. If an Interconnecting Customer payment is not received within 60 Business Days of receiving the Interconnection Service Agreement in the Expedited Process, or the Impact Study in the Standard Process, the Company has the right to reassess construction costs and Time

Frames. In the event that the Interconnecting Customer fails to pay the Company within the Time Frame required by this provision (or within any extension to such Time Frame as authorized in this Section), the Company will require the Interconnecting Customer to reapply for interconnection. Further, any fees paid

will not be refunded. The construction schedule will commence once the Interconnecting Customer's financial payment has been made in full. The Company's obligation to the construction schedule (as it appears in either the Interconnection Service Agreement or the Detailed Study, if the Interconnecting Customer has opted to sign the Interconnection Service Agreement without a Detailed Study) begins on the next Business Day after the Company receives full payment for such construction.

It should be noted that the Company is not required to conduct the Detailed Study or order any of its equipment without receiving adequate payment from the Interconnecting Customer nor will it be required to initiate any construction before it has received full payment from the Interconnecting Customer. The timing of the payments is likely to have an impact on the construction schedule.

~~3.7~~3.8 Force Majeure

a) If a Force Majeure Event prevents a Party from fulfilling any obligations under this Interconnection Tariff, such Party will promptly notify the other Party in writing, and will keep the other Party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected Party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected Party is taking to mitigate the effects of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Interconnection Tariff, other than the obligation to make payments then due or becoming due under this Interconnection Tariff, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected Party will use reasonable efforts to resume its performance as soon as possible. In no event will the unavailability or inability to obtain funds constitute a Force Majeure Event.

b) Changes in local, state or federal laws, regulations or policy relating to distributed generation or distributed generation price changes will not constitute an event of Force Majeure, but if they have substantial impact on a Company's ability to meet Time Frames such changes should constitute a mitigating factor in the measurement or enforcement of Company Time Frames, for example through a Service Quality Metric or alternate enforcement mechanism established by the Department pursuant to Section 49 of Chapter 209 of the Laws of 2012.

~~3.8~~3.9 Time Frame Notification

An Interconnecting Customer may request a review of Time Frame compliance at any time in the interconnection process or at each stage of the interconnection process if a Time Frame deadline has been missed. The Company will provide, via email, a response to the request within 10 Business Days and provide, if a Time Frame deadline was missed, the reason for the missed deadline and the expected date the process step will be completed.

~~3.9~~3.10 Application Fee Refund

a) Within 30 Business Days of the Company's delivery of an executable ISA to the Interconnecting Customer, an Interconnecting Customer may claim that the Company exceeded the aggregate maximum number of Business Days the Company is allowed by the Tariff to deliver an executable Interconnection Service Agreement commencing from the date an application is received ("Aggregate Allowed Tariff Time Frame"). The Customer shall provide the Company with written notice of the basis for any such claim.

b) Within 10 Business Days after the Company receives an Interconnecting Customer's written claim made in accordance with Section 3.9 a) (commencing on the next Business Day after such claim is received), the Company will review the Interconnecting Customer's documentation of non-compliance and make a determination as to whether it exceeded the Aggregate Allowed Tariff Time Frame. In communicating its determination to the Interconnecting Customer, the Company shall provide the Interconnecting Customer with written notice of the basis for its determination.

c) If the amount of time expended is still in dispute, the disputed data will be presented to the Department's distributed generation Ombudsperson for review. If either party is aggrieved by the decision of the Ombudsperson, either party may invoke the Dispute Resolution Process in Section 9.0 of the Interconnection Tariff within 10 Business Days of such decision.

d) If it is determined in accordance with the above procedures that the Company has not complied with the Aggregate Allowed Tariff Time Frame, it shall process a refund of the Interconnecting Customer's application fee within 30 Business Days following the final determination of non-compliance.

e) Nothing in Section 3.6 (Interconnection Application and Facility Construction Time Frame Management) shall prevent an Interconnecting Customer from pursuing an application fee refund in accordance with this Section 3.9.

~~3.10~~3.11 Fee Schedules

Table 6 lays out the fees required for Interconnecting Customers to apply for interconnection.

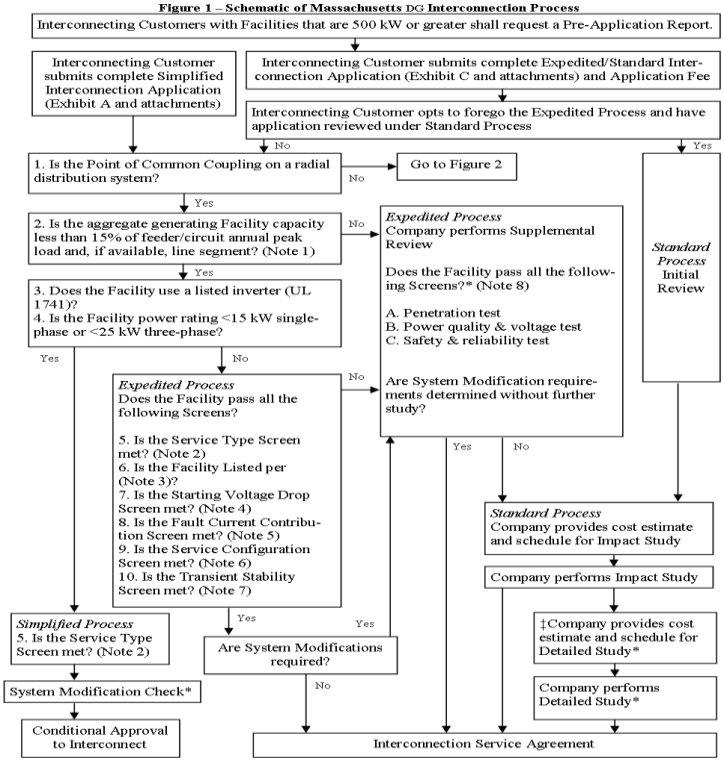
Section 3 Figures and Tables

Figures 1-2 are the Interconnection process flows. Tables 1-5 are the process Time Frames. Table 6 lays out the fees required for Interconnecting Customers to apply for interconnection.

Commented [A17]: Figure 1 (flow chart) below will need to be revised and replaced pursuant to the agreement reached by the TSRG and the additional recommendations made in our comments.

The JESS also recommends that the DPU adopt a new flow chart but also include the precise screen language in the text along with the notes. It is often confusing and difficult to interpret the screens when the language is both found in the table and in the notes.

Figure 1 – Schematic of Massachusetts DG Interconnection Process



*Only if required
‡If a Detailed Study is required, the Interconnecting Customer may request an Interconnection Service Agreement before the Detailed Study is completed. Refer to Section 3.4.

Screens and Explanatory Notes to Accompany Figure 1

Screen 1. Is the Point of Common Coupling on a Radial Distribution Circuit?

Commented [A18]: The TSRG discussed only the process for radial distribution systems and crafted a sample flow chart for those. Since being on a radial distribution system is a key criteria we recommend it be clearly listed as a Screen rather than just a heading.

Screen 2. Is the Service Type Screen met?

Note ~~2~~. This screen includes a review of the type of electrical service provided to the Interconnecting Customer, including the service transformer configuration and service type to limit the potential for creating unacceptable voltage imbalance, over-voltage or under-voltage conditions, or service equipment overloads on the Company EPS due to a mismatch between the size and phasing of the energy source, the service loads fed from the service transformer(s), and the service equipment ratings.

Screen 3~~2~~. Is the Facility's equipment (including PCS) Listed by a NRTL?

Note ~~3~~. A Listed Facility has successfully passed all pertinent tests to conform with IEEE Standard 1547. IEEE Standard 1547 includes design specifications, operational requirements, and a list of tests that are required for Facilities. IEEE Standard 1547.1 describes how to conduct tests to show compliance with provisions of IEEE Standard 1547. To meet Screen #~~2~~3 or #~~47~~6, Interconnecting Customers must provide information or documentation that demonstrates how the Facility is in compliance with the IEEE Standard 1547.1. A Facility will be deemed to be in compliance with the IEEE Standard 1547.1 if the Company previously determined it was in compliance. Interconnecting Customers, who can demonstrate Facility compliance with IEEE Standard 1547.1, with the testing done by a nationally recognized testing laboratory, will be eligible for the Expedited Process, and may be eligible for the Simplified Process upon review by the Company.

Massachusetts has adopted UL1741 (Inverters, Converters and Charge Controllers for Use in Independent Power Systems) and UL2200 (Stationary Engine Generator Assemblies) as the standard for power systems to comply with IEEE Standards~~d~~ 1547 and 1547.1. Equipment listed to UL1741 or UL2200 by a nationally recognized testing laboratory ("NRTL") will be considered in compliance with IEEE Standards~~d~~ 1547 and 1547.1. An Interconnecting Customer should contact the Facility supplier(s) to determine if it has been listed to either of these standards.

Facilities including a Power Control System (PCS) shall utilize PCS equipment that is certified for the purpose of export limiting. All other interconnection system equipment shall be listed for its purpose.

Screen 4. Is the system as a whole designed per its intended purpose?

Note. This screen ensures that all components of the design are utilized in accordance with the manufacturer's instructions and intended use of the listing.

Screen 5~~2~~. Is the aggregate Export Capacity of all Facilities on the circuit less than 15% of the feeder/circuit annual peak load and, if available, line segment? Facilities with no Export Capacity (i.e. n~~N~~on-e~~E~~xporting systems) or those that are proposing to add no new Export Capacity skip this screen.

Note ~~1~~. On a typical radial distribution electric power system ("EPS") circuit ("feeder") the annual peak load is measured at the substation circuit breaker, which corresponds to the supply point of the circuit. A circuit may also be supplied from a tap on a higher-voltage line, sometimes called a subtransmission line. On more complex radial EPSs, where bidirectional power flow is possible due to alternative circuit supply options ("loop service"), the normal supply point is the loop tap.

Commented [A19]: We support clarification of this language, because it is unclear to the reader how screen is being applied. But, since nameplate rating and export capacity are not factors in this note, this is not an immediate need for energy storage and could be addressed later.

Commented [A20]: This is Screen 5 (Note 2) in the original flow chart. The TSRG proposed moving this up to screen 1, we have listed it as screen 2 here in accordance with our recommendation that the radial distribution circuit screen be screen 1. We moved the note up as well.

Commented [A21]: The TSRG reached consensus that Screen 3 should be modified as shown here and reference the original Note 3. We have moved this up to be Screen 2 to correspond to the proposed flow chart and have moved the note up. We also recommend removing the Note numbers or making them match the screen numbers for clarity.

Commented [A22]: The TSRG reached consensus that existing Screen 3 should be modified as shown here and reference Note 3 below. We have moved this up to be Screen 2 so that it corresponds with the flow diagram proposed by the TSRG.

Commented [A23]: We propose adding the following language to clarify the appropriate equipment that needs to be required for systems using a PCS or other type of export controls. We believe this is in line with the TSRG discussions.

Commented [A24]: The TSRG did not have a chance to write a note explaining this screen. We believe this provides a simple explanation of its intent.

Commented [A25]: Consensus was reached in the TSRG on this language for existing Screen 2. We have moved this down to be Screen 4 to match the flow chart and placed the note below it.

Commented [A26]: The TSRG discussions on this topic were incomplete and thus no consensus was reached to add this exception for systems without export. The JESS believe this an important an essential change to ensure customers have the right to manage their on-site load, see our comments for further explanation.

Screen 6. Is the Fault Current Contribution Screen Met?

Note ~~5~~. The purpose of this Screen is to ensure that fault (short-circuit) current contributions from all Facilities will have no significant impact on the Company's protective devices and EPS. All of the following criteria must be met when applicable:

a) The proposed Facility, in aggregation with other generation on the distribution circuit, will not contribute more than 10% to the distribution circuit's maximum fault current under normal operating conditions at the point on the high voltage (primary) level nearest the proposed PCC.

b) The proposed Facility, in aggregate with other generation on the distribution circuit, will not cause any distribution protective devices and equipment (including but not limited to substation breakers, fuse cutouts, and line reclosers), or Interconnecting Customer equipment on the EPS to exceed 85% of the short-circuit interrupting capability. In addition, the proposed Facility will not be installed on a circuit that already exceeds 85% of the short-circuit interrupting capability.

c) When measured at the secondary side (low side) of a shared distribution transformer, the short-circuit contribution of the proposed Facility must be less than or equal to 2.5% of the interrupting rating of the Company's service equipment.

Coordination of fault-current protection devices and systems will be examined as part of this Screen.

Screen 7. Does the Facility meet the following size Threshold?

Size Thresholds	Limited Export Capacity Scheme	
	Utilized	Not Utilized
Single-Phase	≤15kW Export Capacity & ≤30kW Nameplate Rating	≤15kW Nameplate Rating
Three-Phase	≤25kW Export Capacity & ≤50kW Nameplate Rating	≤25kW Nameplate Rating

~~Note 2. This screen includes a review of the type of electrical service provided to the Interconnecting Customer, including the service transformer configuration and service type to limit the potential for creating unacceptable voltage imbalance, over-voltage or under-voltage conditions, or service equipment overloads on the Company EPS due to a mismatch between the size and phasing of the energy source, the service loads fed from the service transformer(s), and the service equipment ratings.~~

Commented [A27]: The TSRG reached agreement that current Screen 8 should be moved up (and be included in the Simplified Process). We have moved the screen up to make it Screen 5 along with the corresponding note. This screen is a good example of why it would be clearer to just have the screen language attached to the notes in each case. No changes were made to the text of the screen or the note.

Commented [A28]: The TSRG and the broader stakeholder working group agreed to the following size thresholds for the Simplified Process. The size threshold was listed as screen 4 in the original flow chart, we have moved it down to be Screen 7 in accordance with the new flow proposed by the TSRG and inserted the table below. (note we added the word "following" to the screen).

~~Note 3. A Listed Facility has successfully passed all pertinent tests to conform with IEEE Standard 1547. IEEE Standard 1547 includes design specifications, operational requirements, and a list of tests that are required for Facilities. IEEE Standard 1547.1 describes how to conduct tests to show compliance with provisions of IEEE Standard 1547. To meet Screen 3 or 4, Interconnecting Customers must provide information or documentation that demonstrates how the Facility is in compliance with the IEEE Standard 1547.1. A Facility will be deemed to be in compliance with the IEEE Standard 1547.1 if the Company previously determined it was in compliance. Interconnecting Customers who can demonstrate Facility compliance with IEEE Standard 1547.1, with the testing done by a nationally recognized testing laboratory, will be eligible for the Expedited Process, and may be eligible for the Simplified Process upon review by the Company.~~

~~Massachusetts has adopted UL1741 (Inverters, Converters and Charge Controllers for Use in Independent Power Systems) and UL2200 (Stationary Engine Generator Assemblies) as the standard for power systems to comply with IEEE Std 1547 and 1547.1. Equipment listed to UL1741 or UL2200 by a nationally recognized testing laboratory will be considered in compliance with IEEE Std 1547 and 1547.1. An Interconnecting Customer should contact the Facility supplier(s) to determine if it has been listed to either of these standards.~~

Screen 8. Is the Starting Voltage Drop Screen met?

Note ~~4~~. This Screen only applies to Facilities that start by motoring the generating unit(s) or the act of connecting synchronous generators. The voltage drops should be less than the criteria below. There are two options in determining whether Starting Voltage Drop could be a problem. The option to be used is at the Company's discretion:

Option 1: The Company may determine that the Facility's starting inrush current is equal to or less than the continuous ampere rating of the Facility's service equipment.

Option 2: The Company may determine the impedances of the service distribution transformer (if present) and the secondary conductors to the Facility's service equipment and perform a voltage drop calculation. Alternatively, the Company may use tables or nomographs to determine the voltage drop. Voltage drops caused by starting a generating unit as a motor must be less than 2.5% for primary interconnections and 5% for secondary interconnections.

~~Note 5. The purpose of this Screen is to ensure that fault (short circuit) current contributions from all Facilities will have no significant impact on the Company's protective devices and EPS. All of the following criteria must be met when applicable:~~

~~a) The proposed Facility, in aggregation with other generation on the distribution circuit, will not contribute more than 10% to the distribution circuit's maximum fault current under~~

Commented [A29]: This is screen 7 in the original flow chart. We have moved it according to the flow chart recommended by the TSRG and included the corresponding note. No other changes were made.

~~normal operating conditions at the point on the high voltage (primary) level nearest the proposed PCC.~~

~~b)~~a) ~~The proposed Facility, in aggregate with other generation on the distribution circuit, will not cause any distribution protective devices and equipment (including but not limited to substation breakers, fuse cutouts, and line reclosers), or Interconnecting Customer equipment on the EPS to exceed 85% of the short circuit interrupting capability. In addition, the proposed Facility will not be installed on a circuit that already exceeds 85% of the short circuit interrupting capability.~~

~~c)~~a) ~~When measured at the secondary side (low side) of a shared distribution transformer, the short circuit contribution of the proposed Facility must be less than or equal to 2.5% of the interrupting rating of the Company's service equipment.~~

~~Coordination of fault current protection devices and systems will be examined as part of this Screen.~~

Screen 9. Is the Service Configuration Screen met?

Note ~~6~~. This Screen includes a review of the type of electrical service provided to the Interconnecting Customer, including line configuration and the transformer connection to limit the potential for creating over voltages on the Company EPS due to a loss of ground during the operating time of any anti-islanding function.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three wire	3-phase or single phase, phase-to-phase	Pass Screen
Three-phase, four wire	Effectively-grounded 3 phase or single-phase, line-to-neutral	Pass Screen

If the ~~proposed generator~~Facility is to be interconnected on a single-phase transformer shared secondary, the aggregate ~~generation capacity~~Export Capacity on the shared secondary, including the ~~proposed generator~~Facility's Export Capacity, will not exceed 20 kilovolt-ampere ("kVA").

If the ~~proposed generator~~Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, the addition of its ~~addition~~Nameplate Rating will not create an imbalance between the two sides of the 240 volt service of more than 20% of ~~nameplate~~the rating of the service transformer.

Note 7. The proposed Facility, in aggregate with other Facilities interconnected to the distribution low voltage side of the substation transformer feeding the distribution circuit where the Facility proposes to interconnect, will not exceed a Nameplate Rating of 10 MW in an area where there are known or posted transient stability limitations to generating units located in the general electrical vicinity (e.g., 3 or 4 transmission voltage level buses from the PCC).

Commented [A30]: This is the original screen 9, moved to correspond with the TSRG's proposed flow chart and to include the screen along with the corresponding note. We have included the changes to the note that were recommended by the TSRG.

Supplemental Review

~~Note 8.~~ Below are the three Screens that are included in the Company's Supplemental Review of an Expedited Project.

The Supplemental Review consists of Supplemental Review Screens A through C. If any of the Screens are not passed, a quick review of the failed Screen(s) will determine the requirements to address the failure(s) or that an Impact Study is required. In certain instances, the Company may be able to identify the necessary solution and determine that an Impact Study is unnecessary. Some examples of solutions that may be available to mitigate the impact of a failed Screen are:

i) Modifying the project by adding an Energy Storage System to control Export Capacity, changing the Operating Schedule of the Facility, or utilizing smart inverter capabilities~~.~~

~~i)~~ii) Replacing a fixed capacitor bank with a switched capacitor bank

~~ii)~~iii) Adjustment of line regulation settings

~~iii)~~iv) Simple reconfiguration of the distribution circuit

Screen A: Penetration Test

Where 12 months of line section minimum load data is available, can be calculated, can be estimated from existing data, or determined from a power flow model, is the aggregate ~~Generating Facility capacity~~Export Capacity on the Line Section less than 100% of the minimum load for all line sections bounded by automatic sectionalizing devices upstream of the ~~Generating Facility?~~Facility? Facilities with no Export Capacity (i.e. non-exporting systems) or those that are proposing to add no new Export Capacity skip this screen.

< If yes (pass), continue to Screen B.
< If no (fail), a quick review of the failure may determine the requirements to address the failure and, if so, continue to Screen B; otherwise Interconnecting Customer will go to the Standard Process.

Note 1: The type of generation will be taken into account when calculating, estimating, or determining circuit or Line Section minimum load relevant for the application of this screen. ~~Solar~~For example, solar generation systems with no ~~battery storage~~Energy Storage System use daytime minimum load (e.g.~~i.e.~~ 10 am to 4 pm for fixed panel systems and 8 am to 6 pm for PV systems utilizing tracking systems), while all other generation uses absolute minimum load. The Company shall apply this screen using the Operating Schedule and system design designated in the Interconnection Application and accompanying attachments. For example, the utility shall evaluate the maximum Export Capacity during the hours of the day~~or season~~ designated by the customer as operational and shall take into account any Limited Export or other export controls if designed in accordance with Section 4.3.

Note 2: ~~Distribution Provider~~The Company will not consider as part of the aggregate generation for

Commented [A31]: As noted above, we recommend the screens be included clearly along with their notes. Thus we would remove the note reference and supply a heading.

Commented [A32]: We recommend explicitly calling out these solutions (which were, for the most part, not available when the screen was first written but which are likely to be reasonable ways of mitigating impacts). This was not discussed by the TSRG.

Commented [A33]: Except as noted in comments below, all the changes herein were part of the TSRG consensus.

Commented [A34]: The TSRG discussions on this topic were incomplete and thus no consensus was reached to add this clarification for non-exporting systems. The JESS believe this an important an essential change to ensure customers have the right to manage their on-site load, see our comments for further explanation.

Commented [A35]: The TSRG did not reach consensus on this language.

NEED TO DESCRIBE

Commented [A36R35]:

purposes of this screen ~~Generating Facility capacity~~Export Capacity known to be already reflected in the minimum load data.
Significance: Penetration of ~~Generating~~ Facility installations that does not result in power flow from the circuit back toward the substation will have a minimal impact on equipment loading, operation, and protection of the Distribution System.

Screen B: Power Quality and Voltage Tests

In aggregate with existing generation on the line section,

a) Can it be determined within the Supplemental Review that the voltage regulation on the line section can be maintained in compliance with current voltage regulation requirements under all system conditions?

b) Can it be determined within the Supplemental Review that the voltage fluctuation is within acceptable limits as defined by IEEE 1453 or utility practice similar to IEEE1453?

c) Can it be determined within the Supplemental Review that the harmonic levels meet IEEE 519 limits at the Point of Common Coupling (PCC)?

- ~~<~~ If yes to all of the above (pass), continue to Screen C.
- ~~<~~ If no to any of the above (fail), a quick review of the failure may determine the requirements to address the failure and, if so, continue to Screen C; otherwise the Interconnecting Customer will go to the Standard Process.

Significance: Adverse voltages and undesirable interference may be experienced by other Customers on Distribution Provider's Distribution System caused by operation of the ~~Generating~~ Facility(ies).

Screen C: Safety and Reliability Tests

Does the location of the proposed ~~Generating~~ Facility or the aggregate generation capacity on the Line Section create impacts to safety or reliability that cannot be adequately addressed without a group or Impact Study?

- ~~<~~ If yes (fail), review of the failure may determine the requirements to address the failure; otherwise the Interconnecting Customer will go to the Standard Process.
- ~~<~~ If no (pass), Supplemental Review is complete.

Significance: In the safety and reliability test, there are several factors that may affect the nature and performance of an Interconnection. These include, but are not limited to:

i) Generation energy source
ii) Modes of synchronization

iii) Unique system topology
iv) Possible impacts to critical load Customers
v) Possible safety impacts

The specific combination of these factors will determine if any system study requirements are needed. The following are some examples of the items that may be considered under this screen:

i) Does the Line Section have significant minimum loading levels dominated by a small number of Customers (i.e. several large commercial Customers)?
ii) Is there an even or uneven distribution of loading along the feeder?

iii) Is the proposed ~~Generating~~ Facility located in close proximity to the substation (i.e. <2.5 electrical line miles), and is the distribution line from the substation to the Customer composed of large conductor/cable (i.e. 600A class cable)?
iv) Does the ~~Generating~~ Facility incorporate a time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time?
v) Is operational flexibility reduced by the proposed ~~Generating~~ Facility, such that transfer of the line section(s) of the Generating Facility to a neighboring distribution circuit/substation may trigger overloads or voltage issues?
vi) Does the ~~Generating~~ Facility utilize UL 1741/IEEE 1547 Certified anti-islanding functions and equipment?

Figure 2 – Simplified Interconnection to Networks

Explanatory Notes to Accompany Figure 2

Screen 1. Does the Facility use a Listed Inverter (UL 1741)?

Note ~~N1~~. A Listed Facility has successfully passed all pertinent tests to conform with IEEE Standard 1547. IEEE Standard 1547 includes design specifications, operational requirements, and a list of tests that are required for Facilities. IEEE Standard 1547.1 describes how to conduct tests to show compliance with provisions of IEEE Standard 1547. To meet Screen 3 or 4, Interconnecting Customers must provide information or documentation that demonstrates how the Facility is in compliance with the IEEE Standard 1547.1 A Facility will be deemed to be in compliance with the IEEE Standard 1547.1 if the Company previously determined it was in compliance. Interconnecting Customers who can demonstrate Facility compliance with IEEE Standard 1547.1, with the testing done by a nationally recognized testing laboratory, will be eligible for the Expedited Process, and may be eligible for the Simplified Process upon review by the Company.

Massachusetts has adopted UL1741 (Inverters, Converters and Charge Controllers for Use in Independent Power Systems) and UL2200 (Stationary Engine Generator Assemblies) as the standard for power systems to comply with IEEE Standard 1547 and 1547.1. Equipment listed to UL1741 or UL2200 by a nationally recognized testing laboratory will be considered in compliance with IEEE Standard 1547 and 1547.1. An

Commented [A37]: At this time we have not proposed any changes to the simplified process flow for networks. We do think that this process should be reviewed as part of a broader discussion about the screens or after the new revisions to 1547.2 are adopted which may provide further insight for screening here.

Below we have recommended some minor wording changes to the screens, mostly to align with the overall changes to terms in the rest of the tariff, and to move the actual screens into the body of the tariff.

NOTE – For unknown reasons the version of the tariff we were provided to work from does not contain the actual "figure" for Figure 2. Thus, despite its absence here, we are not proposing to delete it and have not made changes to it.

Commented [A38]: In alignment with our recommendations above, we suggest the screen language be included in the text along with the notes.

Interconnecting Customer should contact the Facility supplier(s) to determine if it has been listed to either of these standards.

Screen 2. Is the aggregate generating Facility capacity less than 1/15 of Customer's minimum load (daytime load in the case of solar)?

Note ~~N2~~. This screen is to ensure that the ~~proposed generator~~Facility's Nameplate Rating will not exceed 1/15 of the Interconnecting Customer's load. The Company may require an interval meter to be installed in order to determine the Interconnecting Customer minimum load. ~~For~~The Company shall use the appropriate minimum load measurement based upon the hours that the Operating Schedule of the Facility allow it to be generating. For example, for a Solar Facility, only load during daylight hours (while the Solar Facility may be generating) should be used to determine the Interconnecting Customer's minimum load.

Screen 3. For Area Network Only (Skip screen if Spot Network) Is the power rating of the Listed Inverter ≤15kW?

Note ~~N3~~. This screen is used only for F~~f~~acilities applying for interconnection on an area network. If the proposed F~~f~~acility is supplied from a Spot Network, this screen should be ignored and the analysis should continue to the system modification check.

Note N4. Subject to Section 3.1.1(c).

Table 1 – Simplified Process Radial Distribution Circuit Time Frames (Note 1)

	Simplified Process
Eligible Facilities	Listed Small Inverter
Acknowledge Receipt of Application (Note 2)	(3 days)
Review Application for Completeness	10 days
Complete Review of All Screens	15 days (20 Days) (Note 3)
Complete Supplemental Review (if needed)	N/A
Complete Standard Process Initial Review	N/A

Commented [A39]: The JESS suggests that this screen be discussed in the future efforts as it appears to be more conservative that seen elsewhere. For example, IREC's Model Rules in Section III.A.2.e, uses "may not exceed 50 percent of the Spot Network or Area Network's anticipated minimum load."

Commented [A40]: This change was not discussed with the TSRG, but it is important to clarify so that it is in alignment with clarifying whether Nameplate Rating or Export Capacity is used. This is the more conservative option.

Send Follow-on Studies Cost/Agreement	N/A
Complete Impact Study (if needed)	N/A
Complete Detailed Study (if needed)	N/A
Send Executable Agreement (Note 4)	Done. The agreement is part of the application.
Total Maximum Days (Note 5)	25 days (30 days in the case of failure of Screen #5)
Construction Schedule	By Mutual Agreement
Witness Test	Within 10 days from receipt of the Certificate of Completion or by mutual agreement

Table 1 – Simplified Process Time Frames – Explanatory Notes

Note 1. All days listed are in Business Days. In addition, in the event information has been requested of the Interconnecting Customer, all application Time Frames shall commence the next Business Day following receipt of information from the Interconnecting Customer. All Time Frames may be extended by mutual agreement. Any delays caused by Interconnecting Customer will interrupt the applicable Time Frame. A Force Majeure Event, affecting either the Company or the Interconnecting Customer, shall suspend the applicable Time Frame(s). The provisions in Section 3.6.2 regarding Interconnection Application and Interconnecting Customer-requested Time Frame extensions shall also suspend the Time Frames. Pursuant to the above provisions, the Company shall withdraw an Interconnection Application as authorized by the Department.

Note 2. The 3 Business Days the Company has to acknowledge receipt of the Interconnecting Customer's Interconnection Application is included within the 10 Business Day Time Frame for the Company to review the Interconnection Application's completeness.

Note 3. In the event that the Interconnection Application fails Screen #2~~5~~ in Figure 1 of the Interconnection Tariff, it shall not automatically be evaluated under the Expedited Process. The Company shall have 20 Business Days to review an application where the Facility has failed Screen #~~5~~2 in Figure 1.

Note 4. Company delivers an executable agreement form. Once the Interconnection Service Agreement is delivered by the Company, any further modification and timetable will be established by mutual agreement.

Note 5. Review Application for Completeness (10 days, which includes 3 days to Acknowledge Receipt of Application) + Complete Review of All Screens and Send Executable Agreement (15 days from the notification of completeness to review all screens and send an Executable Agreement, which could be up to 20 days if the application fails Screen #2~~5~~).

Commented [A41]: The screen number references herein (and in Note 5 below) should be updated to correspond to the changes to the flow and ordering of the screen. What was screen 5 is now screen 2 in our proposed reordering above.

Table 2 - Expedited Process Time Frames (Note 1)

	Expedited
Eligible Facilities	Listed DG
Acknowledge Receipt of Application (Note 2)	(3 days)
Review Application for Completeness	10 days
Complete Review of All Screens	25 days (50 total days if redesign is submitted)
Complete Supplemental Review (if needed) (Note 3)	20 days (40 total days if redesign is submitted) or Standard Process
Complete Standard Process Initial Review	N/A
Send Follow-on Studies Cost/Agreement	N/A
Complete Impact Study (if needed)	N/A
Complete Detailed Study (if needed)	N/A
Send Executable Agreement (Note 4)	10 days
Total Maximum Days (Note 5)	~~45~~70 days (~~65~~100 days if Supplemental Review is required)
Construction Schedule	By Mutual Agreement
Witness Test	Within 10 days from receipt of the Certificate of Completion or by mutual agreement

Commented [A42]: Part of the stakeholder consensus

Commented [A43]: Part of the stakeholder consensus

Commented [A44]: Part of the stakeholder consensus, though we note that these total timelines only apply to those that are submitting a redesign.

Table 2 – Expedited Process Time Frames – Explanatory Notes

Note 1. All days listed apply to Company Business Days. In addition, in the event information has been requested of the Interconnecting Customer, all application Time Frames shall commence the next Business Day following receipt of information from the Interconnecting Customer. All Time Frames may be extended by mutual agreement. Any delays caused by Interconnecting Customer will interrupt the applicable Time Frame. A Force Majeure Event, affecting either the Company or the Interconnecting Customer, shall suspend the applicable Time Frame(s). The provisions in Section 3.6.2 regarding Interconnection Application and Interconnecting Customer-requested Time Frame extensions shall also

suspend the Time Frames. Pursuant to the above provisions, the Company shall withdraw an Interconnection Application as authorized by the Department. The Time Frames in Table 2 will be affected if ISO-NE determines that a system Impact Study is required. This will occur if the Interconnecting Customer's Facility is equal to or greater than 5 megawatts (MW) and may occur if the Interconnecting Customer's Facility is greater than 1 megawatt (MW).

Note 2. The 3 Business Days the Company has to acknowledge receipt of the Interconnecting Customer's Interconnection Application is included within the 10 business day Time Frame for the Company to review the Interconnection Application's completeness.

Note 3. In the event that an Interconnection Application in the Expedited Process fails the Review Screens in Figure 1 and/or the Supplemental Review, it shall be reviewed under the Standard Process following Standard Process Time Frames.

Note 4. Company delivers an executable agreement form. Once the Interconnection Service Agreement is delivered by the Company, any further modification and timetable will be established by mutual agreement.

Note 5. Explanatory Note: Review Application for Completeness (10 days, which includes 3 days to Acknowledge Receipt of Application) + Complete Review of All Screens (25 days or a total of 50 days if a redesign is submitted) + Complete Supplemental Review (if needed, 20 days or a total of 40 days if a redesign is submitted; or proceed with the Standard Process) + Send Executable Agreement (10 days) = 7045 to 65110 total aggregate days.

Commented [A45]: Part of the stakeholder consensus

Table 3 – Standard Process Time Frames (Note 1)

	Standard
Eligible Facilities	Any DG
Acknowledge Receipt of Application (Note 2)	(3 days)
Review Application for Completeness	10 days
Complete Review of All Screens	N/A
Complete Supplemental Review (if needed)	N/A
Complete Standard Process Initial Review	20 days
Send Impact Study Agreement	5 days

Complete Impact Study (if needed) (Note 3)	55 days
Complete Detailed Study (if needed) (Note 3)	30 days
Send Executable Agreement (Note 4)	15 days
Total Maximum Days (Note 5)	135 days (160 days if the application starts in the Expedited process)
Construction Schedule	By Mutual Agreement
Witness Test	See Section 3.4(n)

Table 3 – Standard Process Time Frames – Explanatory Notes

Note 1. All days listed apply to Company Business Days. In addition, in the event information has been requested of the Interconnecting Customer, all application Time Frames shall commence the next Business Day following receipt of information from the Interconnecting Customer. All Time Frames may be extended by mutual agreement. Any delays caused by Interconnecting Customer will interrupt the applicable Time Frame. A Force Majeure Event, affecting either the Company or the Interconnecting Customer, shall suspend the applicable Time Frame(s). The provisions in Section 3.6.2 regarding Interconnection Application and Interconnecting Customer-requested Time Frame extensions shall also suspend the Time Frames. Pursuant to the above provisions, the Company shall withdraw an Interconnection Application as authorized by the Department. The Time Frames in Table 3 will be affected if ISO-NE determines that a system Impact Study is required. This will occur if the Interconnecting Customer's Facility is, or group of facilities are, equal to or greater than 5 MW and may occur if the Interconnecting Customer's Facility is greater than 1 MW.

Note 2. The 3 Business Days the Company has to acknowledge receipt of the Interconnecting Customer's Interconnection Application is included within the 10 Business Day Time Frame for the Company to review the Interconnection Application's completeness.

Note 3. Time Frames for any Impact or Detailed Study represent the time allowed to complete the final versions of the associated studies, not draft versions. Time Frames for any Impact or Detailed Study that is part of a Group Study shall be determined by mutual agreement.

Note 4. Company delivers an executable agreement form. Once the Interconnection Service Agreement is delivered by the Company, any further modification and timetable will be established by mutual agreement.

Note 5. Review Application for Completeness (10 days, includes 3 days to Acknowledge Receipt of Application) + Complete Standard Process Initial Review (20 days) + Send Impact Study Agreement (5 days) + Complete Impact Study (if needed, 55 days) + Complete Detailed Study (if needed, 30 days) + Send Executable Agreement (15 days) = 135 total aggregate days. The 160 day total maximum time frame applies to an Interconnecting Customer application that starts in the Expedited process.

Commented [A46]: In accordance with the changes to the Standard Process recommended above, timelines should be added for customers who redesign to mitigate impacts. The customer has 5 days to confirm interest in redesigning The customer has 15 days to submit redesign (note that this overlaps with the timeline above and is not duplicative of it) The Company has 10 days to confirm the redesign addresses the issue, OR 20 days if further study is needed.

Commented [A47]: Update in accordance with above.

Commented [A48]: This will need to be updated to include the timelines above for redesign.

Table 4 – Standard Process Complex Projects Time Frames (Note 1)

	Standard Process Complex Projects
Eligible Facilities	Any DG (Note 2)
Acknowledge Receipt of Application (Note 3)	(3 days)
Review Application for Completeness	10 days
Complete Review of All Screens	N/A
Complete Supplemental Review (if needed)	N/A
Complete Standard Process Initial Review	20 days
Send Impact Study Agreement	5 days
Complete Impact Study (if needed)	(Note 4)
Complete Detailed Study (if needed)	(Note 5)
Send Executable Agreement(Note 6)	15 days
Total Maximum Days (Note 7)	200 or more days as determined by required System Modifications
Construction Schedule	By Mutual Agreement
Witness Test	See Section 3.4(n)

Commented [A49]: Please see the notes above regarding adding timelines for the redesign process.

Table 4 – Standard Process Complex Projects Time Frames – Explanatory Notes

Note 1. All days listed apply to Company Business Days. In addition, in the event information has been requested of the Interconnecting Customer, all application Time Frames shall commence the next Business Day following receipt of information from the Interconnecting Customer. Any delays caused by Interconnecting Customer will interrupt the applicable Time Frame. A Force Majeure Event, affecting either the Company or the Interconnecting Customer, shall suspend the applicable Time Frame(s). The provisions in Section 3.6.2 regarding Interconnection Application and Interconnecting Customer-requested Time Frame extensions shall also suspend the Time Frames. Pursuant to the above provisions, the Company shall withdraw an Interconnection Application as authorized by the Department. The Time Frames in Table 4 will be affected if ISO-NE determines that a system Impact Study is required. This will occur if the Interconnecting Customer's Facility is, or group of facilities are, equal to or greater than 5 MW and may occur if the Interconnecting Customer's Facility is greater than 1 MW.

Note 2. Interconnection Applications that are evaluated under the Standard Process Complex Projects Time Frames are Facility Interconnection Applications that will require extensive System Modifications.

Note 3. The 3 Business Days the Company has to acknowledge receipt of the Interconnecting Customer's Interconnection Application is included within the 10 Business Day Time Frame for the Company to review the Interconnection Application's completeness.

Note 4. Time Frames for the Impact Study represent the time allowed to complete the final version of the study, not draft versions. If the Interconnection Application will require any Sub-Station modifications, the Company shall have the following time periods in which to complete the Impact Study for each Interconnection Application: 75 Business Days in 2013; 75 Business Days in 2014; 70 Business Days in 2015; and 60 Business Days in 2016 and thereafter. The applicable Time Frame for the Impact Study is determined by the year the Impact Study commences and remains in effect for the duration of the Impact Study, regardless if the Impact Study concludes in a year with a shorter Time Frame. Time Frames for any Impact Study that is part of a Group Study shall be determined by mutual agreement.

Note 5. Time Frames for the Detailed Study represent the time allowed to complete the final version of the study, not draft versions. If the System Modifications identified in the Impact Study are likely to be $200,000 or more in EPS upgrades not including service upgrades for the Interconnecting Customer site, the Company shall have the following time periods in which to complete the Detailed Study for each Interconnection Application: 75 Business Days in 2013; 75 Business Days in 2014; 70 Business Days in 2015; and 60 Business Days in 2016 and thereafter. The applicable Time Frame for the Impact Study is determined by the year the Impact Study commences and remains in effect for the duration of the Impact Study, regardless if the Impact Study concludes in a year with a shorter Time Frame. If System Modifications are estimated to cost $1 million or more, the Time Frames for both the Impact and Detailed Studies will be by mutual agreement. The Company will track adherence to the mutually agreed upon Time Frame. In the event that the Company later determines that the System Modifications will cost less than $1 million, the Interconnection Application will revert to the Time Frames for Sub-Station Modifications or System Modifications costing $200,000 or more but less than $1 million as appropriate. The Company will inform the Interconnecting Customer within 20 days following the commencement of the Impact study whether the Interconnection Application shall be treated as a Complex Project under the Standard Process. If at any time during the Impact Study the Company determines that the System Modifications will cost $1 million or more, the Detailed Study Time Frame shall be by mutual agreement. Time Frames for any Detailed Study that is part of a Group Study shall be determined by mutual agreement.

Note 6. Company delivers an executable agreement form. Once the Interconnection Service Agreement is delivered by the Company, any further modification and timetable will be established by mutual agreement.

Note 7. Review Application for Completeness (10 days, includes 3 days to Acknowledge Receipt of Application) + Complete Standard Process Initial Review (20 days) + Send Impact Study Agreement (5 days) + Complete Impact Study (Note 4 – amount of time allowed decreases over time, currently 75 days in 2014 or by mutual agreement depending upon system modifications (see notes 4 and 5 above)) +

Complete Detailed Study (Note 4 – amount of time allowed decreases over time, currently 75 days in 2014 or by mutual agreement depending upon system modifications (see notes 4 and 5 above)) + Send Executable Agreement (15 days). The minimum aggregate time frame for the Standard Process Complex Projects is 200 Business Days. The maximum aggregate time frame shall be determined by adding the Impact Study time frame determined by the Company within the first 20 Business Days of commencement of the study consistent with provision 3.4(f) of this Tariff, and the Detailed Study time frame determined by the Company for the Detailed Study upon delivery of the Detailed Study agreement, if applicable.

Table 5 – Simplified Spot and Area Network Time Frames (Note 1)

	Simplified Spot and Area Network
Eligible Facilities	Listed Inverter
Acknowledge Receipt of Application (Note 2)	(3 days)
Review Application for Completeness	10 days
Complete Review of All Screens	30/90 days (Note 3)
Complete Supplemental Review (if needed)	N/A
Complete Standard Process Initial Review	N/A
Send Follow-on Studies Cost/Agreement	N/A
Complete Impact Study (if needed)	N/A
Complete Detailed Study (if needed)	N/A
Send Executable Agreement (Note 4)	Done (Comparable to Simplified for Radial). The agreement is part of the application.
Total Maximum Days (Note 5)	40 days (100 days if minimum load is unknown).
Construction Schedule	By Mutual Agreement
Witness Test	Within 10 days of receipt of the Certificate of Completion or by mutual agreement

Table 5 – Simplified Spot and Area Network Time Frames – Explanatory Notes

Note 1. All days listed apply to Company Business Days. In addition, in the event information has been requested of the Interconnecting Customer, all application Time Frames shall commence the next Business Day following receipt of information from the Interconnecting Customer. Any delays caused by Interconnecting Customer will interrupt the applicable Time Frame. A Force Majeure Event, affecting either the Company or the Interconnecting Customer, shall suspend the applicable Time Frame(s). The provisions in Section 3.6.2 regarding Interconnection Application and Interconnecting Customer-requested Time Frame extensions shall also suspend the Time Frames. Pursuant to the above provisions, the Company shall withdraw an Interconnection Application as authorized by the Department. The Time Frames in Table 5 will be affected if ISO-NE determines that a system Impact Study is required. This will occur if the Interconnecting Customer's Facility is, or group of facilities are, equal to or greater than 5 MW and may occur if the Interconnecting Customer's Facility is greater than 1 MW.

Note 2. The 3 Business Days the Company has to acknowledge receipt of the Interconnecting Customer's Interconnection Application is included within the 10 Business Day Time Frame for the Company to review the Interconnection Application's completeness.

Note 3.If the Interconnecting Customer minimum load is known, the Company shall have 30 Business Days to review an application. If the Interconnecting Customer minimum load is not known and an interval meter needs to be installed, the Company will install, at the Interconnecting Customer's expense, an interval meter to measure 3 months of continuous customer load capturing the annual minimum load. The maximum time the interval metering will be used to measure the minimum load is 9 months from the point of the time the analysis was commenced.

Note 4. Company delivers an executable agreement form. Once the Interconnection Service Agreement is delivered by the Company, any further modification and timetable will be established by mutual agreement.

Note 5. Review Application for Completeness (10 days, includes 3 days to Acknowledge Receipt of Application) + Complete Review of All Screens and Send Executable Agreement if minimum load is known (30 days) or + Complete Review of All Screens and Send Executable Agreement if minimum load is not known (90 days).

Table 6 - Fee Schedules

Commented [A50]: It should be clarified that the sizes below refer to Nameplate Rating.

These fee schedules apply to Interconnecting Customers only from the effective date of the tariff revisions and may not be retroactively applied to Interconnecting Customers with an Interconnection Application on file with the Company prior to the tariff revisions effective date.

	Simplified	Expedited	Standard (Note 1)	Simplified Spot and Area Network
	Listed Small Inverter	Listed DG	Any DG	Listed Inverter

Application Fee (covers Screens)	0 (Note 2)	$4.50/kW, minimum $300, maximum $7,500	$4.50/kW, minimum $300, maximum $7,500	≤3kW $100, >3kW $300
Supplemental Review (if applicable)	N/A	Up to 30 engineering hours at $150/hr ($4,500 maximum) (Note3)	N/A	N/A
Standard Interconnection Initial Review	N/A	N/A	Included in application fee (if applicable)	N/A
Impact and Detailed Study (if required)	N/A	N/A	Actual cost (Note 4)	N/A
System Modifications	N/A (Note 5)	Actual cost	Actual cost	N/A
O&M (Note 6)	N/A	TBD	TBD	N/A
Witness Test	0	Actual cost, up to $300 + travel time (Note 7)	Actual Cost	0 (Note 8)

Table 6- Fee Schedules Explanatory Notes

Note 1. Costs associated with Group Studies shall be allocated in accordance with Section 3.4.1.

Note 2. If the Company determines that the Facility does not qualify for the Simplified Process, it will let the Interconnecting Customer know what the appropriate fee is.

Note 3. Supplemental Review is defined in Section 3.3.

Note 4. This is the actual cost only attributable to the Interconnecting Customer. Any costs not expended from the application fee previously collected will go toward the costs of these studies.

Note 5. Not applicable except in certain rare cases where a System Modification would be needed. If so, the modifications are the Interconnecting Customer's responsibility.

Note 6. O & M is defined as the Company's operations and maintenance carrying charges on the incremental costs associated with serving the Interconnecting Customer.

Note 7. The fee will be based on actual cost up to $300 plus driving time, unless Company representatives are required to do additional work due to extraordinary circumstances or due to problems on the Interconnecting Customer's side of the PCC (e.g., Company representative required to make two trips to the site), in which case Interconnecting Customer will cover the additional cost.

Note 8. Unless extraordinary circumstances.

4.0 INTERCONNECTION REQUIREMENTS

4.1 General Design Considerations

Interconnecting Customer shall design and construct the Facility in accordance with the applicable manufacturer's recommended maintenance schedule, in compliance with all aspects of the Company's Interconnection Tariff and Company-specific technical standards for interconnection of distributed generation. Interconnecting Customer agrees to cause its Facility to be constructed in accordance with applicable specifications that meet or exceed those provided under this Section of the Interconnection Tariff.

4.1.1 Transient Voltage Conditions

Because of unusual events in the Company's EPS, there will be transient voltage fluctuations, which will result in voltages exceeding the limits of the stated ranges. These transient voltage fluctuations, which generally last only a few milliseconds, arise due to EPS disturbances including, but not limited to, lightning strikes, clearing of faults, and other switching operations. The magnitude of transient voltage fluctuations varies with EPS configuration, grounding methods utilized, local short circuit availability, and other parameters, which vary from point-to-point and from time-to-time on the distribution EPS.

The fluctuations may result in voltages exceeding the limits of the stated ranges and occur because of EPS disturbance, clearing of faults and other switching operations. These unavoidable transients are generally of too short duration and insufficient magnitude to have any adverse effects on general service applications. They may, however, cause malfunctions in equipment highly sensitive to voltage changes, and protective devices may operate to shut down such devices. The magnitude, duration and frequency of transient fluctuations will vary due to EPS configuration and/or circuit arrangement. In addition, disturbances of indeterminate magnitude and duration may occur on infrequent occasions due to short circuits, faults, and other unpredictable conditions.

Transient voltages should be evaluated in the design of the Facility.

4.1.2 Noise and Harmonics

The introduction of abnormal noise/harmonics can cause abnormal neutral current flow, and excessive heating of electrical equipment. Harmonics may also cause distortion in TV pictures, telephone interference, and malfunctions in digital equipment such as computers. The permissible level of harmonics is dependent upon the voltage level and short circuit ratio at a given location. The most current version of IEEE Standard 1547 provides these levels at the PCC. In requiring adherence to the most current version of IEEE Standard 1547, the Company is in no way making a recommendation regarding the level of harmonics that a given piece of equipment can tolerate nor is it making a recommendation as to the permissible level in the

Interconnecting Customer's Facility.

4.1.3 Frequency

The interconnected electric power system in North America, which is maintained at 60 hertz ("Hz") frequency on its alternating current services, is subject to certain deviations. The usual maximum instantaneous deviation from the standard 60 Hz is ±2/10 cycle (±0.33%), except on infrequent occasions when the deviation may reach ±1/10 cycle (±0.17%). The usual normal deviation is approximately ±1/20 cycle (±0.083%). These conditions are subject to occur at any time of the day or night and should be considered in the design of the Facility. All are measured on a 60 Hz base.

4.1.4 Voltage Level

All electricity flow across the PCC shall be in the form of single-phase or three-phase 60 Hz alternating current at a voltage class determined by mutual agreement of the Parties.

4.1.5 Machine Reactive Capability

Facilities with a Nameplate Rating of less than 1 megawatt ("MW") will not be required to provide reactive capability, except as may be provided by the retail rate schedule and Terms and Conditions for Distribution Services under which the Interconnecting Customer takes service.

Facilities with a Nameplate Rating greater than or equal to 1 MW interconnected with the Company EPS shall be required to provide reactive capability to regulate and maintain EPS voltage at the PCC as per NEPOOL requirements. The Company and NEPOOL shall establish a scheduled range of voltages to be maintained by the Facility. The reactive capability requirements shall be reviewed as part of the Impact Study and Detailed Study.

4.2 Protection Requirements for New or Modified Facility Interconnections with the EPS

4.2.1 General Requirements

Any Facility desiring to interconnect with the Company EPS or modify an existing interconnection must meet minimum specifications, where applicable, as set forth in the most current version of the following documents and standards and requirements in this Section.

i) IEEE Standard 1547, "IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems."

ii) UL Standard 1741, "Inverters, Converters and Charge Controllers for Use in Independent Power Systems."

iii) Company-specific technical standards.

In the event that the IEEE or UL Standards referenced above conflict with the Company-specific technical specifications, the Company-specific technical specifications control and shall be followed. The specific differences shall be communicated to the Technical Standards Review Group.

The specifications and requirements listed herein are intended to mitigate possible adverse impacts caused by the Facility on the Company's equipment and personnel and on other Interconnecting Customers of the Company. They are not intended to address protection of the Facility itself or its internal load. It is the responsibility of the Facility to comply with the requirements of any Company-specific published technical specifications and all appropriate standards, codes, statutes and authorities to protect itself and its loads.

The Company shall not be responsible for the protection of the Facility. The Facility shall be responsible for protection of its system against possible damage resulting from parallel operation with the Company so long as the Company adheres to Good Utility Practice. If requested by the Interconnecting Customer, the Company will provide system protection information for the line terminal(s) directly related to the interconnection. This protection information contained herein is provided exclusively for use by the Interconnecting Customer to evaluate protection of its Facility during parallel operation.

At its sole discretion, the Company may consider approving alternatives that satisfy the intent of the requirements contained in this Section.

4.2.2 Facility Classification

To determine the protection requirements for a given Facility, the following Groups have been established:

Group	Type of Interconnection
1	Facilities Qualified for Simplified Interconnection
2	All Facilities Not Qualified for Simplified Interconnection

4.2.3 Protection Requirements

All Facilities must meet performance requirements set forth in relevant sections of IEEE Standard 1547, in particular the attachments specific to Under Voltage Ride Through, Under Frequency Ride Through and VAr control. Additionally, all Facilities must meet the Company-specific technical requirements.

4.2.3.1 Group 1 Facilities

a) The inverter-based Facility shall be considered Listed if it meets requirements set forth in Section 3.1 "Simplified Process".

b) External Disconnect Switch: For Listed inverters, the Company may require an external disconnect switch (or comparable device by mutual agreement of the Parties) at the PCC

with the Company or at another mutually agreeable point that is accessible to Company personnel at all times and that can be opened for isolation if the switch is required. The switch shall be gang operated, have a visible break when open, be rated to interrupt the maximum generator output and be capable of being locked open, tagged and grounded on the Company side by Company personnel. The visible break requirement can be met by opening the enclosure to observe the contact separation. The Company shall have the right to open this disconnect switch in accordance with this Interconnection Tariff.

4.2.3.2 Group 2 Facilities

4.2.3.2.1 General Requirements

~~a) Non Export Power: If the Parties mutually agree that non-export functionality will be part of the interconnection protection equipment then it will include one of the following: (1) a reverse power relay with mutually agreed upon delay intervals, or (2) a minimum power function with mutually agreed upon delay intervals, or (3) other mutually agreeable approaches, for example, a comparison of nameplate rating versus certified minimum Customer premises load.~~

a) The interconnection of Limited Export Facilities is governed by Section 4.3 of this tariff.

b) The ISO-NE is responsible for assuring compliance with NPCC criteria. For the interconnection of some larger units, the NPCC criteria may additionally require:

NPCC Protective Relaying Requirements: The Company may require the Facility to be equipped with two independent, redundant relaying systems in accordance with NPCC criteria, where applicable, for the protection of the bulk power system if the interconnection is to the bulk power system or if it is determined that delayed clearing of faults within the Facility adversely affects the bulk power system.

NPCC Requirements: During system conditions where local area load exceeds system generation, NPCC Emergency Operation Criteria requires a program of phased automatic under frequency load shedding of up to 25% of area load to assist in arresting frequency decay and to minimize the possibility of system collapse. Depending on the point of connection of the Facility to the Company's EPS and in conformance with the NPCC Emergency Operating Criteria, the Facility may be required to remain connected to the EPS during the frequency decline to allow the objectives of the automatic load shedding program to be achieved, or to otherwise provide compensatory load reduction, equivalent to the Facility's generation lost to the system, if the Interconnecting Customer elects to disconnect the Facility at a higher under-frequency set point.

c) Disconnect Switch: The Facility shall provide a disconnect switch (or comparable device mutually agreed upon by the Parties) at the point of Facility interconnection that can be

opened for isolation. The switch shall be in a location easily accessible to Company personnel at all times. The switch shall be gang operated, have a visible break when open, be rated to interrupt the maximum generator output and be capable of being locked open, tagged and grounded on the Company side by Company personnel. The visible break requirement can be met by opening the enclosure to observe the contact separation. The Company shall exercise such right in accordance with Section 7.0 of this Interconnection Tariff.

d) Transfer Tripping: A direct transfer tripping system, if one is required by either the Interconnecting Customer or by the Company, shall use equipment generally accepted for use by the Company and shall, at the option of the Company, use dual channels if the Company-specific technical standards require.

4.2.3.2.2 Requirements for Induction and Synchronous Generator Facilities

Commented [A51]: The following sections may need to be modified to match the new definitions provided for Export Capacity and Nameplate Capacity. We have not modified this section at this time.

a) Interconnection Interrupting Device: An interconnection Interrupting Device such as a circuit breaker shall be installed to isolate the Facility from the Company's EPS. If there is more than one Interrupting Device, this requirement applies to each one individually. The Interconnection Interrupting Device must be capable of interrupting the current produced when the Facility is connected out of phase with the Company's EPS, consistent with the most current version of Section 4.1.8.3 of IEEE Standard 1547 which states, "the interconnection system paralleling-device shall be capable of withstanding 220% of the interconnection system rated voltage."

b) Synchronizing Devices: The Interconnecting Customer shall designate one or more Synchronizing Devices such as motorized breakers, contactor/breaker combinations, or a fused contactor (if mutually agreeable) to be used to connect the Facility's generator to the Company's EPS. This Synchronizing Device could be a device other than the interconnection Interrupting Device. The Synchronizing Device must be capable of interrupting the current produced when the Facility is connected out of phase with the Company's EPS, consistent with the most current version of Section 4.1.8.3 of IEEE Standard 1547-2003 which states, "the interconnection system paralleling-device shall be capable of withstanding 220% of the interconnection system rated voltage."

c) Transformers: The Company reserves the right to specify the winding connections for the transformer between the Company's voltage and the Facility's voltage ("Step-Up Transformer") as well as whether it is to be grounded or ungrounded at the Company's voltage. In the event that the transformer winding connection is grounded-wye/grounded-wye the Company reserves the right to specify whether the generator stator is to be grounded or not grounded. The Interconnecting Customer shall be responsible for procuring equipment with a level of insulation and fault-withstand capability compatible with the specified grounding method.

d) Voltage relays: Voltage relays shall be frequency compensated to provide a uniform response in the range of 40 to 70 Hz.

e) Protective Relaying Redundancy: For induction generators greater than 1/15 of on-site minimum verifiable load that is not equipped with on-site capacitors or that is greater than 200 kW, and for all synchronous generators, protective relays utilized by the Facility shall be sufficiently redundant and functionally separate so as to provide adequate protection, consistent with Company practices and standards, upon the failure of any one component.

f) Protective Relay Hard-Wire Requirement: Unless authorized otherwise by the Company, protective relays must be hardwired to the device they are tripping. Further, interposing computer or programmable logic controller or the like is not permitted in the trip chain between the relay and the device being tripped.

g) Protective Relay Supply: Where protective relays are required in this Section, their control circuits shall be DC powered from a battery/charger system or a UPS. Solid-state relays shall be self-powered, or DC powered from a battery/charger system or a UPS. If the Facility uses a Company-acceptable non-latching interconnection contactor, AC powered relaying shall be allowed provided the relay and its method of application are fail safe, meaning that if the relay fails or if the voltage and/or frequency of its AC power source deviate from the relay's design requirements for power, the relay or a separate fail-safe power monitoring relay acceptable to the Company will immediately trip the generator by opening the coil circuit of the interconnection contactor.

h) Current Transformers ("CT"): CT ratios and accuracy classes shall be chosen such that secondary current is less than 100 amperes and transformation errors are consistent with Company practices. CTs used for revenue class metering must have a secondary current of 20 amperes or less.

i) Voltage Transformers ("VT") and Connections: The Facility shall be equipped with a direct voltage connection or a VT, connected to the Company side of the Interrupting Device. The voltage from this VT shall be used in an interlock scheme, if required by the Company. For three-phase applications, a VT for each phase is required. All three phases must be sensed either by three individual relays or by one relay that contains three elements. If the voltage on any of the three phases is outside the bounds specified by the Company the unit shall be tripped. If the Facility's Step-Up Transformer is ungrounded at the Company voltage, this VT shall be a single three-phase device or three single-phase devices connected from each phase to ground on the Company's side of the Facility's Step- Up Transformer, rated for phase-to-phase voltage and provided with two secondary windings. One winding shall be connected in open delta, have a loading resistor to prevent ferroresonance, and be used for the relay specified in these requirements.

4.2.3.2.3 Additional Requirements for Induction Generator Facilities

a) Self-Excitation: A Facility using induction generators connected in the vicinity of capacitance sufficient to self-excite the generator(s) shall meet the requirements for synchronous machines. The capacitors that enable self-excitation may actually be external to the Facility. The Company will not restrict its existing or future application of capacitors on its lines nor restrict their use by other Interconnecting Customers of the Company to accommodate a Facility with induction machines. If self-excitation becomes possible due to the installation of or presence of capacitance, the protection requirements of the Facility may need to be reviewed and revised, if applicable.

The Facility may be required to install capacitors to limit the adverse effects of drawing reactive power from the EPS for excitation of the generator. Capacitors for supply of reactive power at or near the induction generator with a kilovolts-ampere reactive ("kVAr") rating greater than 30% of the generator's kW rating may cause the generator to become self-excited. (If self-excitation can occur, the Facility shall be required to provide protection as specified in synchronous machines requirements.)

4.2.3.2.4 Additional Requirements for Synchronous Generator Facilities

a) Ungrounded Transformers: If the Facility's Step-Up Transformer connection is ungrounded, the Facility shall be equipped with a zero sequence over-voltage relay fed from the open delta of the three-phase VT specified in the Voltage Transformers and Connections Section 4.2.3.2.2.i.

b) High-Speed Protection: The Facility may be required to use high-speed protection if time-delayed protection would result in degradation in the existing sensitivity or speed of the protection systems on the Company's EPS.

c) Breaker Failure Protection: The Facility may be required to be equipped to provide local breaker failure protection which may include direct transfer tripping to the Company's line terminal(s) in order to detect and clear faults within the Facility that cannot be detected by the Company's back-up protection.

d) Communications Channels: The Interconnecting Customer is responsible for procuring any communications channels necessary between the Facility and the Company's stations, and for providing protection from transients and over-voltages at all ends of these communication channels. The Interconnecting Customer will also bear the ongoing cost to lease these communication channels. Examples include, but are not limited to, connection to a line using high-speed protection, transfer tripping, generators located in areas with low-fault currents, or back up for generator breaker failure.

4.2.4 Protection System Testing and Maintenance

The Company shall have the right to witness the commissioning testing as defined in the most current version of IEEE Standard 1547 and the Company-specific technical requirements at the completion of construction and to receive a copy of all test data. The Facility shall be equipped with whatever equipment is required to perform this test.

Testing typically includes, but is not limited to:

- CT and VT circuit polarity, ratio, insulation, excitation, continuity and burden tests;
- Relay pick-up and time delay tests;
- Functional breaker trip tests from protective relays;
- Relay in-service test to check for proper phase rotation and magnitudes of applied currents and voltages;
- Breaker closing interlock tests; and
- Paralleling and disconnection operation.

Prior to final approval by the Company or anytime thereafter, the Company reserves the right to test the generator relaying and control related to the protection of the Company's EPS.

The Interconnecting Customer has the full responsibility for the proper periodic maintenance of its generating equipment and its associated control, protective equipment and interrupting devices.

The Interconnecting Customer is responsible for the periodic maintenance of those relays, interrupting devices, control schemes, and batteries that involve the protection of the Company's EPS. A periodic maintenance program, mutually agreeable to both the Company and to the Interconnecting Customer is to be established in each case. The Company shall have the right to monitor the periodic maintenance performed.

For relays installed in accordance with the NPCC Criteria for the Protection of the Bulk Power System, maintenance intervals shall be in accordance with such criteria. The results of these tests shall be summarized by the Interconnecting Customer and reported in writing to the Company.

The Company reserves the right to install special test equipment as may be required to monitor the operation of the Facility and its control or for evaluating the quality of power produced by the Facility at a mutually agreed upon location. The cost of this testing will be borne by the Company unless there is shown to be a problem associated with the Facility or if the test was performed at the request of the Interconnecting Customer.

Each routine check shall include both a calibration check and an actual trip of the circuit breaker or contactor from the device being tested. Visually setting a calibration dial, index or tap is not considered an adequate

calibration check.

Inverters with field adjustable settings for their internal protective elements shall be periodically tested if those internal elements are being used by the Facility to satisfy the requirements of this Section.

4.2.5 Protection Requirements – Momentary Paralleling of Standby ~~Generators~~Facilities

Protective relays to isolate the Facility for faults in the Company EPS are not required if the paralleling operation is automatic and takes place for less than one-half of a second. An Interrupting Device with a half-second timer (30 cycles) is required as a fail-safe mechanism.

Parallel operation of the Facility with the Company EPS shall be prevented when the Company's line is dead or out of phase with the Facility.

The control scheme for automatic paralleling must be submitted by the Interconnecting Customer for review and acceptance by the Company prior to the Facility being allowed to interconnect with the Company EPS.

4.2.6 Protection System Changes

The Interconnecting Customer must provide the Company with reasonable advance notice of any proposed changes to be made to the protective relay system, relay settings, operating procedures or equipment that affect the interconnection. The Company will determine if such proposed changes require additional review and/or approval of the interconnection per the requirements of this Section.

In the future, should the Company implement changes to the EPS to which the Facility is interconnected, the Interconnecting Customer will be responsible at its own expense for identifying and incorporating any necessary changes to its protection equipment. These changes to the Facility's protection equipment are subject to review and approval by the Company.

4.3 Limited-Export and Non-Exporting Facilities

~~4.3~~

4.3.1 ~~4.3.1~~ General Requirements

The Export Capacity of a Facility shall be considered limited if the Facility complies with the requirements of Section 4.3, subsections 4.3.2 through 4.3.4 to limit the export of electrical power across the Point of Common Coupling. If the Facility utilizes a design that meets the requirements of Section 4.3, that will determine the Export Capacity of a Facility for use in the Simplified, Expedited, Standard and Complex Processes.

To prevent impacts on system safety and reliability, the Interconnecting Customer shall provide proposed Facility capabilities including sequence of operation, time delays in response, and potential maximum export to the Company as part of the Interconnection Application to describe the proposed Facility operation and any potential

Inadvertent Export. If the Company needs further information beyond what is provided in the Application it shall use best efforts to request this information all at one time, in a timely manner to avoid the need for delays. The Export Capacity specified by the Interconnecting Customer in the Interconnection Application, including the Operating Schedule if utilized in the engineering analysis, will be included as an operational limitation in the Interconnection Service Agreement.

Export Capacity will be factored into specific screens and application eligibility criteria elsewhere within the tariff, and shall be considered by the Company, as appropriate, when performing reviews and/or engineering analyses. Complying with any of the requirements of subsections 4.3.2. through 4.3.4 may not negate the need for additional protective relays for other Protective Functions.

4.3.2 Power Limiting via Protective Functions

Directional power flow at the Point of Common Coupling may be monitored in order for the Facility to take action upon sensing reverse power flow onto the Area EPS or sensing of power import to the Facility below a specific setpoint. The following Protective Functions are acceptable:

- A reverse power Protective Function to ensure zero power production from the Facility across the Point of Common Coupling.

- A Protective Function to ensure a pre-defined power import or Limited Export to/ from the Facility, across the Point of Common Coupling.

Dynamic adjustment of the Protective Function in response to a utility control signal will be permissible upon mutual agreement between the Company and Interconnecting Customer. Varying Export Capacity (e.g., seasonal, time of day) as designated in the Operating Profile will be considered by the Company in the engineering analysis for all process tracks.

In all instances where a Protective Function is employed to limit the power export, the device must be certified for its intended use by a NRTL.

The device(s) that contain(s) the Protective Function may utilize adjustable or fixed trip point and/or time delay settings:

- For adjustable setting devices, the Interconnecting Customer shall provide to the Company their proposed settings (limit value, trip or cease to energize setting and/or time delay) and describe the manner in which the settings are protected from inadvertent or malicious adjustment on their one-line diagram in their Interconnection Application.

- For fixed setting devices, the Interconnecting Customer shall provide the fixed setpoints (limit value, trip or cease to energize setting and/or time delay) on their one-line diagram in their Interconnection Application.

- For all devices, the Interconnecting Customer must provide proof of NRTL listing on their one-line diagram in their Interconnection Application and provide system accuracy data, including CT and VT accuracy as well as any relevant equipment accuracies provided by the manufacturer.

Protective Function device settings may vary depending on the specifics of the proposed Facility design, proposed equipment, and the electrical characteristics of the interconnecting feeder. The Company will provide permissible setting range(s) and similar technical guidance in the Company's technical standards.

Acceptable Protective Functions and associated equipment include, but are not limited to:

1) A utility-grade protective relay with an ANSI 32 element (directional power) in compliance with the Company's technical standards, including specific response times, configured to maintain one of the following:
   a. Maximum export value across the PCC
   b. Zero export across PCC
   c. Minimum import to facility from the PCC

2) A certified[4] Power Control System in compliance with the Company's technical standards, including specific response times, set to maintain power output in accordance with one of the following:
   a. Maximum export value across the PCC
   b. Zero export across PCC
   c. Minimum import to facility from the PCC

3) For Facilities that have a Nameplate Rating less than or equal to 60 kW, a certified Power Control System[5] with an open loop response time of less than or equal to 30 seconds set to maintain power output in accordance with one of the following:
   a. Maximum export value across the PCC
   b. Zero export across PCC
   c. Minimum import to facility from the PCC

The Export Capacity value for systems that qualify under this section is exclusive of Inadvertent Export. If a Facility does not meet one of the criteria above then Inadvertent Export may need to be further evaluated.

4.3.3 Reduced Rating Capacity

A reduced capacity rating below that of the Nameplate Rating may be included in the Facility design in order to lower the Export Capacity of the Facility. The reduced capacity rating must be applied to customer equipment

[4] NRTL testing to the UL Power Control System Certification Requirements Decision shall be accepted until similar test procedures for Power Control Systems are included in a standard.
[5] NRTL testing to the UL Power Control System Certification Requirements Decision shall be accepted until similar test procedures for Power Control Systems are included in a standard.

Commented [A52]: "Current Transformers" and "Voltage Transformers" – these are written out above in Section 4.2.

Commented [A53]: We suggest 60kW to line up with the current Class I resource size. However, there may be non-NEM resources that can benefit from this as well as long as they are in the same size range.

that directly allows for power flow from the Facility and whose rating reduction will make the Facility physically incapable of producing power above a specific value.[6] Most typically, this reduced rating capacity is expected to be applied to the Facility inverters.

The reduced Nameplate Rating shall be implemented by the manufacturer or its representatives and shall not be field adjustable by anyone other than the manufacturer or its representatives. The reduced Nameplate Rating shall be indicated by means of a Nameplate Rating replacement, or by a supplemental adhesive Nameplate Rating tag to indicate the reduced Nameplate Rating. At the discretion of the Company the Interconnecting Customer may additionally be required to provide a letter from the manufacturer confirming the reduced capacity.

4.3.4 Limited Export Using Mutually Agreed-Upon Means

Facilities may be designed with other control systems and/or Protective Functions to limit export and/or Inadvertent Export to levels mutually agreed upon by the Interconnecting Customer and Company. The proposed design scheme must be approved by the Company in accordance with Company technical requirements.

5.0 RESPONSIBILITY FOR COSTS OF INTERCONNECTING A FACILITY

5.1 Review and Study Costs

The Interconnecting Customer shall be responsible for the reasonably incurred costs of the review by the Company and any interconnection studies conducted as defined by Table 6 ("Fee Schedules") of Section 3.0 of this Interconnection Tariff solely to determine the requirements of interconnecting a Facility with the Company EPS.

5.2 Interconnection Equipment Costs

The Interconnecting Customer shall be responsible for all costs associated with the installation and construction of the Facility and associated interconnection equipment on the Interconnecting Customer's side of the PCC.

5.3 System Modification Costs

The Interconnecting Customer shall also be responsible for all costs reasonably incurred by Company attributable to the proposed interconnection project in designing, constructing, operating and maintaining

[6] A reduced power rating utilizing the configuration setting may be used to ensure the Facility achieves the reduced capacity. The configuration setting corresponds to the active or apparent power ratings in Table 28 of IEEE Std 1547™-2018, as described in subclause 10.4. A local DER communication interface is not required to utilize the configuration setting as long as it can be set by other means.

the System Modifications.[7] At the time that the Company provides an Interconnecting Customer with any Impact Study or Detailed Study, the Company shall also provide, along with that Study, a statement of the Company's policies on collection of tax gross-ups. To the extent that Company Terms and Conditions and/or tariffs allow, the Company will refund the appropriate portion of System Modification costs to the Interconnecting Customer as required by the applicable tariff. In the event that a new Facility interconnects to the circuit that was the subject of the Group Study within 5 years, that Interconnecting Customer shall be assessed System Modification costs consistent with the Company's line extension policy; however, new Interconnecting Customers in the Simplified Process shall be exempt from this required cost allocation. The 5 year period shall be calculated from the date of execution of the Interconnection Service Agreement of the first Interconnecting Customer within the Group Study.

5.4 Separation of Costs

Should the Company combine the installation of System Modifications with additions to the Company's EPS to serve other Customers or Interconnecting Customers, the Company shall not include the costs of such separate or incremental facilities in the amounts billed to the Interconnecting Customer for the System Modifications required pursuant to this Interconnection Tariff. The Interconnecting Customer shall only pay for that portion of the interconnection costs resulting solely from the System Modifications required to allow for safe, reliable parallel operation of the Facility with the Company EPS.

5.5 Normal Payment Procedure

All application, study fees and System Modification costs (except as noted below) are due in full prior to the execution of the work as outlined in this Interconnection Tariff. If the anticipated costs exceed $25,000, the Interconnecting Customer is eligible for a payment plan, including a payment and construction schedule with milestones for both parties. At the request of the Interconnecting Customer, the Company will break the costs into phases in which the costs will be collected prior to Company expenditures for each phase of the study and/or construction including ordering equipment. The payment plan will be attached as an exhibit to the Interconnection Service Agreement or relevant study agreements.

5.6 Security and Creditworthiness

In order for the Company to agree to any payment plan where some work may be performed in advance of payment, the Company may require the Interconnecting Customer to provide evidence of creditworthiness. In the event that Interconnecting Customer cannot provide such evidence to the satisfaction of the Company, then the Company may require the Interconnecting Customer to provide sufficient security in order to take advantage of a payment plan. Interconnecting Customer acknowledges that it will be responsible for the actual costs of the System Modifications described in the attached exhibit to the Interconnection Service Agreement, whether greater or lesser than the amount of the payment security

[7] The Interconnecting Customer will be directly responsible for costs not incurred by the Company that are otherwise necessary to interconnect the Interconnecting Customer's Facility, including but not limited to: poles set by other companies, telecommunications, costs incurred by municipalities, pole mounted equipment owned by other entities, etc.

provided under this section.

6.0 OPERATING REQUIREMENTS

6.1 General Operating Requirements

Interconnecting Customer shall operate and maintain the Facility in accordance with the applicable manufacturer's recommended maintenance schedule, in compliance with all aspects of the Company's Interconnection Tariff. The Interconnecting Customer will continue to comply with all applicable laws and requirements after interconnection has occurred. In the event the Company has reason to believe that the Interconnecting Customer's installation may be the source of problems on the Company EPS, the Company has the right to install monitoring equipment at a mutually agreed upon location to determine the source of the problems. If the Facility is determined to be the source of the problems, the Company may require disconnection as outlined in Section 7.0 of this Interconnection Tariff. The cost of this testing will be borne by the Company unless the Company demonstrates that the problem or problems are caused by the Facility or if the test was performed at the request of the Interconnecting Customer.

6.2 No Adverse Effects; Non-interference

Company shall notify Interconnecting Customer if there is evidence that the operation of the Facility could cause disruption or deterioration of service to other Customers served from the same Company EPS or if operation of the Facility could cause damage to Company EPS or Affected Systems. The deterioration of service could be, but is not limited to, harmonic injection in excess of what is stated in the most current version of IEEE Standard 1547, as well as voltage fluctuations caused by large step changes in loading at the Facility. Each Party will notify the other of any emergency or hazardous condition or occurrence with its equipment or facilities which could affect safe operation of the other Party's equipment or facilities. Each Party shall use reasonable efforts to provide the other Party with advance notice of such conditions.

The Company will operate the EPS in such a manner so as to not unreasonably interfere with the operation of the Facility. The Interconnecting Customer will protect itself from normal disturbances propagating through the Company EPS, and such normal disturbances shall not constitute unreasonable interference unless the Company has deviated from Good Utility Practice. Examples of such disturbances could be, but are not limited to, single-phasing events, voltage sags from remote faults on the Company EPS, and outages on the Company EPS. If the Interconnecting Customer demonstrates that the Company EPS is adversely affecting the operation of the Facility and if the adverse effect is a result of a Company deviation from Good Utility Practice, the Company shall take appropriate action to eliminate the adverse effect.

6.3 Safe Operations and Maintenance

Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for the facility or facilities that it now or hereafter may own unless otherwise specified in this Interconnection Tariff. Each Party shall be responsible for the maintenance, repair and condition of its respective lines and appurtenances on their respective side of the PCC. The Company and the Interconnecting Customer shall each provide

equipment on its respective side of the PCC that adequately protects the Company's EPS, personnel, and other persons from damage and injury.

6.4 Access

The Company shall have access to the disconnect switch of the Facility at all times.

6.4.1 Company and Interconnecting Customer Representatives

Each Party shall provide and update as necessary the telephone number that can be used at all times to allow either Party to report an emergency.

6.4.2 Company Right to Access Company-Owned Facilities and Equipment

If necessary for the purposes of this Interconnection Tariff and in the manner it describes, the Interconnecting Customer shall allow the Company access to the Company's equipment and the Company's facilities located on the Interconnecting Customer's or Customer's premises. To the extent that the Interconnecting Customer does not own all or any part of the property on which the Company is required to locate its equipment or facilities to serve the Interconnecting Customer under this Interconnection Tariff, the Interconnecting Customer shall secure and provide in favor of the Company the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require. In addition to any rights and easements required by the Company in accordance with the provisions above, the Interconnecting Customer shall obtain an executed Landowner Consent Agreement (Exhibit I) from the Landowner, unless the Company, in its sole discretion, waives this requirement.

6.4.3 Right to Review Information

The Company shall have the right to review and obtain copies of Interconnecting Customer's operations and maintenance records, logs, or other information such as, unit availability, maintenance outages, circuit breaker operation requiring manual reset, relay targets and unusual events pertaining to Interconnecting Customer's Facility or its interconnection with the Company EPS. This information will be treated as customer-confidential and only used for the purposes of meeting the requirements of Section 4.2.4.

7.0 DISCONNECTION

7.1 Temporary Disconnection

a) Emergency Conditions. Company shall have the right to immediately and temporarily disconnect the Facility without prior notification in cases where, in the reasonable judgment of Company, continuance of such service to Interconnecting Customer is imminently likely to (i) endanger persons or damage property or (ii) cause a material adverse effect on the integrity or security of, or damage to, Company EPS or to the electric systems of others to which the Company EPS is directly connected. Company shall notify

Interconnecting Customer promptly of the emergency condition. Interconnecting Customer shall notify Company promptly when it becomes aware of an emergency condition that affects the Facility that may reasonably be expected to affect the Company EPS. To the extent information is known, the notification shall describe the emergency condition, the extent of the damage or deficiency, or the expected effect on the operation of both Parties' facilities and operations, its anticipated duration and the necessary corrective action.

b) Routine Maintenance, Construction and Repair. Company shall have the right to disconnect the Facility from the Company EPS when necessary for routine maintenance, construction and repairs on the Company EPS. The Company shall provide the Interconnecting Customer with a minimum of seven calendar days planned outage notification consistent with the Company's planned outage notification protocols. If the Interconnecting Customer requests disconnection by the Company at the PCC, the Interconnecting Customer will provide a minimum of seven days notice to the Company.

Any additional notification requirements will be specified by mutual agreement in the Interconnection Service Agreement. Company shall make an effort to schedule such curtailment or temporary disconnection with Interconnecting Customer.

c) Forced Outages. During any forced outage, Company shall have the right to suspend interconnection service to effect immediate repairs on the Company EPS; provided, however, Company shall use reasonable efforts to provide the Interconnecting Customer with prior notice. Where circumstances do not permit such prior notice to Interconnecting Customer, Company may interrupt Interconnection Service and disconnect the Facility from the Company EPS without such notice.

d) Non-Emergency Adverse Operating Effects. The Company may disconnect the Facility if the Facility is having an adverse operating effect on the Company EPS or other Customers that is not an emergency, and the Interconnecting Customer fails to correct such adverse operating effect after written notice has been provided and a maximum of 45 days to correct such adverse operating effect has elapsed.

e) Modification of the Facility. Company shall notify Interconnecting Customer if there is evidence of a Material Mmodification to the Facility and shall have the right to immediately suspend interconnection service in cases where such Mmaterial Mmodification has been implemented without prior written authorization from the Company.

f) Re-connection. Any curtailment, reduction or disconnection shall continue only for so long as reasonably necessary. The Interconnecting Customer and the Company shall cooperate with each other to restore the Facility and the Company EPS, respectively, to their normal operating state as soon as reasonably practicable following the cessation or remedy of the event that led to the temporary disconnection.

7.2 Permanent Disconnection

The Interconnecting Customer has the right to permanently disconnect at any time with 30 days written notice to the Company.

The Company may permanently disconnect the Facility upon termination of the Interconnection Service Agreement in accordance with the terms thereof.

8.0 METERING, MONITORING, AND COMMUNICATION

This Section sets forth the rules, procedures and requirements for metering, monitoring and communication between the Facility and the Company EPS where the Facility exports power or is net metered or is otherwise subject to NEPOOL requirements. Interconnecting Customer will be responsible for reasonable and necessary costs incurred by Company for the purchase, installation, operation, maintenance, testing, repair and replacement of metering and data acquisition equipment specified in the Attachments to the Interconnection Service Agreement. The Interconnecting Customer's metering (and data acquisition, as required) equipment shall conform to rules and applicable operating requirements.

8.1 Metering, Related Equipment and Billing Options

The Company shall furnish, read and maintain all revenue metering equipment. The Interconnecting Customer shall furnish and maintain all meter mounting equipment such as or including meter sockets, test switches, conduits, and enclosures. Except as provided below, the Company shall own the meter and the Interconnecting Customer shall pay to the Company a monthly charge to cover taxes, meter maintenance, incremental reading and billing costs, the allowable return on the invoice cost of the meter and the depreciation of the meter. These charges are set forth in the applicable Company tariff(s), as amended from time to time. If the Facility is a Qualifying Facility or On-Site Generating Facility the Interconnecting Customer may elect to own the meter, in which case, the Interconnecting Customer shall pay to the Company a monthly charge to cover meter maintenance and incremental reading and billing costs. Metering requirements and associated charges for Qualifying Facilities and On-Site Generating Facilities are set forth in the applicable Company tariff(s), as amended from time to time. If the Interconnecting Customer elects to install its own meter under the terms of 220 CMR §8.0, the Interconnecting Customer shall be responsible for purchasing and installing software, hardware and/or other technology that may be required by the Company to read billing meters.

The Interconnecting Customer shall provide suitable space within the Facility for installation of the metering, and communication equipment at no cost to the Company.

All metering equipment installed pursuant to this Interconnection Tariff and associated with the Facility shall be routinely tested by the Company at Interconnecting Customer's expense, in accordance with applicable Company and/or ISO-NE criteria, rules and standards. If, at any time, any metering equipment is found to be inaccurate by a margin greater than that allowed under applicable criteria, rules and standards, the Company shall cause such metering equipment to be made accurate or replaced. The cost to repair or

replace the meter shall be borne by the Company, if the Company owns the meter, or by the Interconnecting Customer if the Interconnecting Customer owns the meter. Meter readings for the period of inaccuracy shall be adjusted so far as the same can be reasonably ascertained; provided, however, no adjustment prior to the beginning of the preceding month shall be made except by agreement of the Parties. Each Party shall comply with any reasonable request of the other concerning the sealing of meters, the presence of a representative of the other Party when the seals are broken and the tests are made, and other matters affecting the accuracy of the measurement of electricity delivered from the Facility. If either Party believes that there has been a meter failure or stoppage, it shall immediately notify the other.

If the Metering Point and the Point of Receipt or Point of Delivery are not at the same location, the metering equipment shall record delivery of electricity in a manner that accounts for losses occurring between the Metering Point and the Point of Receipt or Point of Delivery. Losses between the Metering Point and Point of Receipt will be reflected pursuant to applicable Company, NEPOOL or ISO-NE criteria, rules or standards.

The type of metering equipment to be installed at a Facility is dependent on the size of the Facility and how and if the Facility plans to export power or net meter. For those that will export power or net meter, the available equipment options and associated requirements are:

- For Facilities 60 kW or less, unless the Interconnecting Customer elects another form of metering, the Facilities will be equipped with net metering in which metering equivalent to or replicating that of a standard distribution class meter is installed and is enabled to run in a normal direction during periods of net consumption and to run backwards during periods of net generator output. All metering equipment included in this type of installation, including self-contained meters and instrument transformers and meters, shall meet ANSI C12.1 Metering Accuracy Standards and ANSI C57.13 accuracy requirements for instrument transformers.

- For Facilities larger than 60 kW, the Facilities will be equipped with bi-directional, interval meter with remote access – in which a distribution class meter with multiple registers is installed. One set of registers will record energy flows from the Company to the Facility during periods when the Facility is a net consumer of energy (the other register will record no flow during these periods) and a second set of registers will record energy flows from the Facility to the Company during periods when the Facility is a net producer of energy (the other register will record no flow during these periods). Each set of registers will record total flows as well as flows during hourly intervals. In addition, the meters will be equipped with remote access capability that may include communication to the extent required by applicable NEPOOL standards. All metering equipment included in this type of installation shall meet the requirements contained in NEPOOL Operating Procedure No. 18, "Metering and Telemetering Criteria" and the Company's "Policy and Practices for Metering and Telemetering Requirements for New or Modified Interconnections." Copies of both publications are available from the Company upon request. The Interconnecting Customer shall be responsible for providing all necessary leased telephone lines (or other Company approved communication means) and any necessary protection for leased lines and shall furthermore be

responsible for all communication required by ISO-NE, or by ISO-NE's designated satellite. The Interconnecting Customer shall maintain all communication and transducer equipment at the Facility in accordance with ISO-NE criteria, rules and standards. The Company will purchase, own and maintain all communication equipment located on the Interconnecting Customer's Facilities, if the Interconnecting Customer desires, at the Interconnecting Customer's expense. The Interconnecting Customer shall provide, install and own Company-approved or Company-specified test switches in the transducer circuits.

- In addition, Facilities, or group of facilities, which are equal to 5 MW or greater are required by NEPOOL Operating Procedures No. 14 and No. 18 to provide communication equipment and to supply accurate and reliable information to system operators regarding metered values for MW, MVAR, volt, amp, frequency, breaker status and all other information deemed necessary by ISO-NE and the NEPOOL Satellite (REMVEC).

8.2 Additional Monitoring and Communication requirements

As the amount of distributed generation on the Company EPS grows significantly, additional monitoring and communication may be required by the Department pursuant to a future proceeding.

9.0 DISPUTE RESOLUTION PROCESS

The Dispute Resolution Process is a multi-stage process described below, beginning with negotiation, then mediation, followed by non-binding arbitration and then adjudication. All days in this Section are calendar days.

9.1 Good Faith Negotiation

a) One party submits a request in writing to the other party for initiation of Step 9.1 of the Dispute Resolution Process. The Parties will elevate the dispute to a Vice President or senior management with sufficient authority to make a decision.

b) If after 8 days the dispute is not resolved, one party to the dispute may request dispute resolution assistance by submitting a written request to the Department appointed DG ombudsperson ("Ombudsperson"), with a copy of such request to the other party, in accordance with the processes outlined in Department orders D.P.U. 11-75-E and D.P.U. 11-75-F.

c) If after 8 days from the Parties receipt in writing of the Ombudperson's proposed resolution the dispute is still not resolved, one or both Parties may initiate Section 9.2.

9.2 Mediation/Non-binding Arbitration

a) If the differences are not resolved in Step 9.1, the Department will provide a list of qualified neutrals and manage the selection of individual neutrals for the case. The Department will use a list of pre-qualified neutrals maintained at the Department and, the Parties will select a mutually agreeable mediator pursuant to a reverse-strike-out process[8] or another mutually-agreeable method. If either party requests a technical expert, both a mediator and a technical expert will be selected, and the technical expert will be selected using the same strike out process or another mutually-agreeable method as that used for selection of the mediator.

b) Parties will complete the neutral selection process with the Department within seven days. This timetable will only be possible if the Department has, during the initial 14 days, identified mediators and technical experts who have the time available to assist the Parties in a timely manner.

c) The Department will arrange for the selected mediator to contact Parties.

d) The Parties will contract with neutrals for services, splitting the fees 50/50.

e) The mediator begins by discussing the case with the disputing Parties to assess the scope of issues and understand the Parties' positions and interests. The mediator and Parties will establish a schedule for completing the mediation process within 30 days. Ten days after the 30-day time period begins, the Department will issue a public notice of the proceeding and will schedule a pre-hearing conference for Section 9.3. The mediator will assist the Parties in developing a scope of work for the technical expert if one is needed. The mediator will also assist the Parties in estimating the Dispute Resolution Process costs and addressing any concerns about those costs.

f) Mediation meeting or meetings are held.

g) If the Parties reach agreement, the Dispute Resolution Process ends here.

h) If the Parties do not reach a mediated agreement, the neutral(s) will issue a brief recommended solution or decision.

i) If the Parties accept the neutral's recommendation, the dispute resolution process ends here.

j) If one or both Parties do not accept the neutral recommendation and there is still no agreement, the dispute proceeds to Step 9.3.

9.3 Department Adjudicatory Hearing

[8] A "reverse strike out process" involves each party eliminating the least desirable mediator until one is left standing.

The goal of this Step is an adjudicatory hearing at the Department, with witnesses, evidence, etc. that results in a binding precedential decision, appealable to the Massachusetts Supreme Judicial Court.

a) In the event a party does not accept the recommendation in Step 9.2, it may request, in writing, a Department adjudication.

b) The Department holds a pre-hearing conference for which notice has been provided in accordance with Section 9.2(e). The Parties, to the extent desirable and feasible, exchange information and establish an expedited schedule during the pre-hearing conference.

c) The Department and the Parties engage in pre-hearing discovery, as needed in the specific case, building on the information developed in Step 9.2, including the mediator's recommendation.

d) The Department conducts a hearing.

e) The Parties file briefs, if one or both desire to do so or the Department requests they do so. The Parties and the Department will complete Step 9.3(b) through 9.3(e) in 90 days. The Department issues its order within 20 days. If it is unable to do so, it will notify the Parties and provide a revised decision date.

f) The Department will appoint a hearing officer or other Department staff person familiar with the DG interconnection process in Massachusetts to oversee the selection of private neutrals and otherwise serve as a resource for DG cases.

Disputes subject to the Dispute Resolution Process on these issues are not meant to be considered as Interconnecting Customer complaints as part of the Companies' service quality plans in effect at the time. This does not preclude the Interconnecting Customer from filing Interconnecting Customer complaints for which they are otherwise eligible.

10.0 CONFIDENTIALITY STATEMENT

Information including identifying information and specific Facility information may be shared with the Department. A list of all executed DG Interconnection Service Agreements will be submitted to the Department annually. Interconnecting Customers may elect to petition the Department to maintain confidentiality with their information; however, the Department is under no obligation to grant this confidentiality.

If an Interconnecting Customer's project qualifies for a Group Study, the Company is authorized to share Interconnecting Customer's contact information and project details with other Interconnecting Customers also involved in the Group Study.

In an ongoing effort to improve the interconnection process for Interconnecting Customer-owned Facilities, the information provided by Interconnecting Customers and the results of the application process will be aggregated with the information of other applicants, i.e. Interconnecting Customers, and periodically reviewed by a DG working group authorized by the Department consisting of industry participants. The aggregation process will not reveal specific details for any one Interconnecting Customer. In addition to this process, Interconnecting Customers may choose to allow non-identifying information specific to their applications to be shared with the DG working group by answering "Yes" to the Confidentiality Statement question on the first page of the application form.

11.0 INSURANCE REQUIREMENTS

11.1 General Liability

a) In connection with Interconnecting Customer's performance of its duties and obligations under the Interconnection Service Agreement, Interconnecting Customer shall maintain, during the term of the Agreement, general liability insurance with a combined single limit of not less than:

   i) Five million dollars ($5,000,000) for each occurrence and in the aggregate if the Gross Nameplate Rating of Interconnecting Customer's Facility is greater than five (5) MW;

   ii) Two million dollars ($2,000,000) for each occurrence and five million dollars ($5,000,000) in the aggregate if the Gross Nameplate Rating of Interconnecting Customer's Facility is greater than one (1) MW and less than or equal to five (5) MW;

   iii) One million dollars ($1,000,000) for each occurrence and in the aggregate if the Gross Nameplate Rating of Interconnecting Customer's Facility is greater than one hundred (100) kW and less than or equal to one (1) MW;

   iv) Five hundred thousand dollars ($500,000) for each occurrence and in the aggregate if the Gross Nameplate Rating of Interconnecting Customer's Facility is greater than ten (10) kW and less than or equal to one hundred (100) kW, except as provided below in subsection 11.1(b).

b) Pursuant to 220 C.M.R. § 18.03(2), no insurance is required for Interconnecting Customers with facilities eligible for Class 1 Net Metering (facilities less than or equal to sixty (60) kW). However, the Company recommends that the Interconnecting Customer obtain

adequate insurance to cover potential liabilities.

c) Any combination of General Liability and Umbrella/Excess Liability policy limits can be used to satisfy the limit requirements stated above.

d) The general liability insurance required to be purchased in this Section 11 may be purchased for the direct benefit of the Company and shall respond to third party claims asserted against the Company (hereinafter known as "Owners Protective Liability"). Should this option be chosen, the requirement of Section 11.2(a) will not apply but the Owners Protective Liability policy will be purchased for the direct benefit of the Company and the Company will be designated as the primary and "Named Insured" under the policy.

e) The insurance hereunder is intended to provide coverage for the Company solely with respect to claims made by third parties against the Company.

f) In the event the Commonwealth of Massachusetts, or any other governmental subdivision thereof subject to the claims limits of the Massachusetts Tort Claims Act, G.L. c. 258 (hereinafter referred to as the "Governmental Entity") is the Interconnecting Customer, any insurance maintained by the Governmental Entity shall contain an endorsement that strictly prohibits the applicable insurance company from interposing the claims limits of G.L. c. 258 as a defense in either the adjustment of any claim, or in the defense of any lawsuit directly asserted against the insurer by the Company. Nothing herein is intended to constitute a waiver or indication of an intent to waive the protections of G.L. c. 258 by the Governmental Entity.

g) Notwithstanding the requirements of section 11.1(a) through (f), insurance for certain Governmental Entity facilities may be provided as set forth in section 11.1(g)(i) and (ii) below. Nothing herein changes the provision in subsection 11.1(a)(iv) that exempts Class I Net Metering facilities (less than or equal to 60 kW) from the requirement to obtain insurance. In addition, nothing shall prevent the Governmental Entity from obtaining insurance consistent with the provisions of subsection 11.1(a) through (f), if it is able and chooses to do so.

i) For solar photovoltaic (PV) facilities with a Gross Nameplate Rating in excess of 60 kW up to 500 kW, the Governmental Entity is not required to obtain liability insurance. Any liability costs borne by the Company associated with a third-party claim for damages in excess of the claims limit of the Massachusetts Tort Claims Act, M.G.L. c. 258, and market-based premium-related costs, if any, borne by the Company associated with insurance for such third-party claims shall be recovered annually on a reconciling basis in Company rates in a manner that shall be reviewed and approved by the Department.

ii) For (a) PV facilities with a Gross Nameplate Rating in excess of 500 kW up to 5 MW, (b) wind facilities with a Gross Nameplate Rating in excess of 60 kW up to 5 MW, and (c) highly efficient combined heat and power facilities with a Gross Nameplate Rating of in excess of 60 kW up to 5 MW, the Governmental Entity is not required to obtain liability insurance, subject to the requirements of the following paragraph.

The Company shall either self-insure for any risk associated with possible third-party claims for damages in excess of the Massachusetts Tort Claims Act limit, or obtain liability insurance for such third-party claims, and the Company is authorized to charge and collect from the Governmental Entity its pro-rata allocable share of the cost of so doing, plus all reasonable administrative costs. The coverage and cost may vary with the size and type of facility, and may change (increase or decrease) over time, based on insurance market conditions, and such cost shall be added to, and paid for as part of the Governmental Entity's electric bill.

11.2 Insurer Requirements and Endorsements

All required insurance shall be carried by reputable insurers qualified to underwrite insurance in MA having a Best Rating of at least "A-". In addition, all insurance shall, (a) include Company as an additional insured; (b) contain a severability of interest clause or cross-liability clause; (c) provide that Company shall not incur liability to the insurance carrier for payment of premium for such insurance; and (d) provide for thirty (30) calendar days' written notice to Company prior to cancellation, termination, or material change of such insurance; provided that to the extent the Interconnecting Customer is satisfying the requirements of subpart (d) of this paragraph by means of a presently existing insurance policy, the Interconnecting Customer shall only be required to make good faith efforts to satisfy that requirement and will assume the responsibility for notifying the Company as required above.

If the requirement of clause (a) in the paragraph above prevents Interconnecting Customer from obtaining the insurance required without added cost or due to written refusal by the insurance carrier, then upon Interconnecting Customer's written Notice to Company, the requirements of clause (a) shall be waived.

11.3 Evidence of Insurance

Evidence of the insurance required shall state that coverage provided is primary and is not in excess to or contributing with any insurance or self-insurance maintained by Interconnecting Customer.

The Interconnecting Customer is responsible for providing the Company with evidence of insurance in compliance with this Interconnection Tariff on an annual basis.

Prior to the Company commencing work on System Modifications, and annually thereafter, the Interconnecting Customer shall have its insurer furnish to the Company certificates of insurance evidencing the insurance coverage required above. The Interconnecting Customer shall notify and send to the Company

a certificate of insurance for any policy written on a "claims-made" basis. The Interconnecting Customer will maintain extended reporting coverage for three years on all policies written on a "claims- made" basis.

In the event that an Owners Protective Liability policy is provided, the original policy shall be provided to the Company.

11.4 Self Insurance

If Interconnecting Customer has a self-insurance program established in accordance with commercially acceptable risk management practices, Interconnecting Customer may comply with the following in lieu of the above requirements as reasonably approved by the Company:

a) Interconnecting Customer shall provide to the Company, at least thirty (30) calendar days prior to the Date of Initial Operation, evidence of such program to self-insure to a level of coverage equivalent to that required.

b) If Interconnecting Customer ceases to self-insure to the standards required hereunder, or if Interconnecting Customer is unable to provide continuing evidence of Interconnecting Customer's financial ability to self-insure, Interconnecting Customer agrees to promptly obtain the coverage required under Section 11.1.

This section shall not allow any Governmental Entity to self-insure where the existence of a limitation on damages payable by a Government Entity imposed by the Massachusetts Tort Claims Act, G.L. c. 258, or similar law, could effectively limit recovery (by virtue of a cap on recovery) to an amount lower than that required in Section 11.1(a).

12.0 ASSIGNMENT

Except as provided herein, Interconnecting Customer shall not voluntarily assign its rights or obligations, in whole or in part, under this tariff without the Company's written consent. Any assignment purportedly made by Interconnecting Customer without the Company's written consent shall not be valid. The Company shall not unreasonably withhold or delay its consent to Interconnecting Customer's assignment of this Agreement. Notwithstanding the above, the Company's consent will not be required for any assignment made by Interconnecting Customer to an Affiliate or as collateral security in connection with a financing transaction. In all events, the Interconnecting Customer will not be relieved of its obligations under this tariff unless, and until the assignee assumes in writing all obligations of this Agreement and notifies the Company of such assumption.

Commented [A54]: We have removed the exhibits and attachments from this draft. They will need to be updated to conform to any changes adopted by the DPU.
In particular, in the simplified application we suggest adding the following two definitions to match the changes above.

"Export Capacity" means the maximum Nameplate Rating of a Facility in alternating current (AC), except where such capacity is limited by an acceptable means as identified in Section 4.3 of this Interconnection Tariff, or as permitted by the Company.

"Nameplate Rating" shall mean the individual or sum total maximum continuous power output (AC) capacity of all of a Facility's constituent generating units and/or Energy Storage Systems as identified on the manufacturer nameplate, regardless of whether it is limited by any approved means.