

MA DG Interconnection Tariff Change Request Form (2012)

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Date of Request: 8/22/12	Section of Tariff to be effected:	E-mail Address: fcummings@peregrinegroup.com
Requested Priority (emergency/high/low/editorial):	Requested Implementation Date:	Status:

Summary of Proposed Change:

From 8/22/12 *Draft Outline (With Material)*:

“Adjust Expedited Screens to potentially allow more currently going thru Standard process: to Expedited

Add CA Screens N, O, and P to supplemental review—if pass these, still eligible for Expedited:

N: penetration test—power flows from circuit back to sub will have minimum impact

O: power quality and voltage test

P: safety and reliability test—can adequately be addressed w/o impact study.

Clarify what’s happening in the 20 day supplemental review phase.”

More Detailed Explanation (Exactly what change is required?)

1.) Lift 10 hour engineering limitation on Supplemental Review, and

2.) As specified in attached version of Figure 1:

- Insert 3 screens in box “Perform Supplemental Review”, and

- Add new arrow specifying that if all 3 screens are passed, the Facility moved to the System Modification Check.

3) Add new Note 8, consisting of attached language from Rule 21 settlement modified with terminology from MA tariff

Reason, Substantiation, and Anticipated Benefits:

- Shifting applications from Standard to Expedited will streamline the process and avoid unnecessary studies, reducing the work load on utility staff and enabling utilities to improve timeline performance.

- Review screens are intended to identify projects with no or low impacts (IREC).

- When minimum load data is not currently available, Screen N (Penetration) provides for it to be “calculated, estimated from existing data, or determined from a power flow model.”

- The concern expressed by utilities about operational flexibility is addressed in Screen P (Safety).

Red-Lined Tariff Language (referencing page numbers): (attach if lengthy)

See Figure 1

For Change Control Manager Use Only:

Date of Discussion:	Expected Implementation Date:	ID Number:
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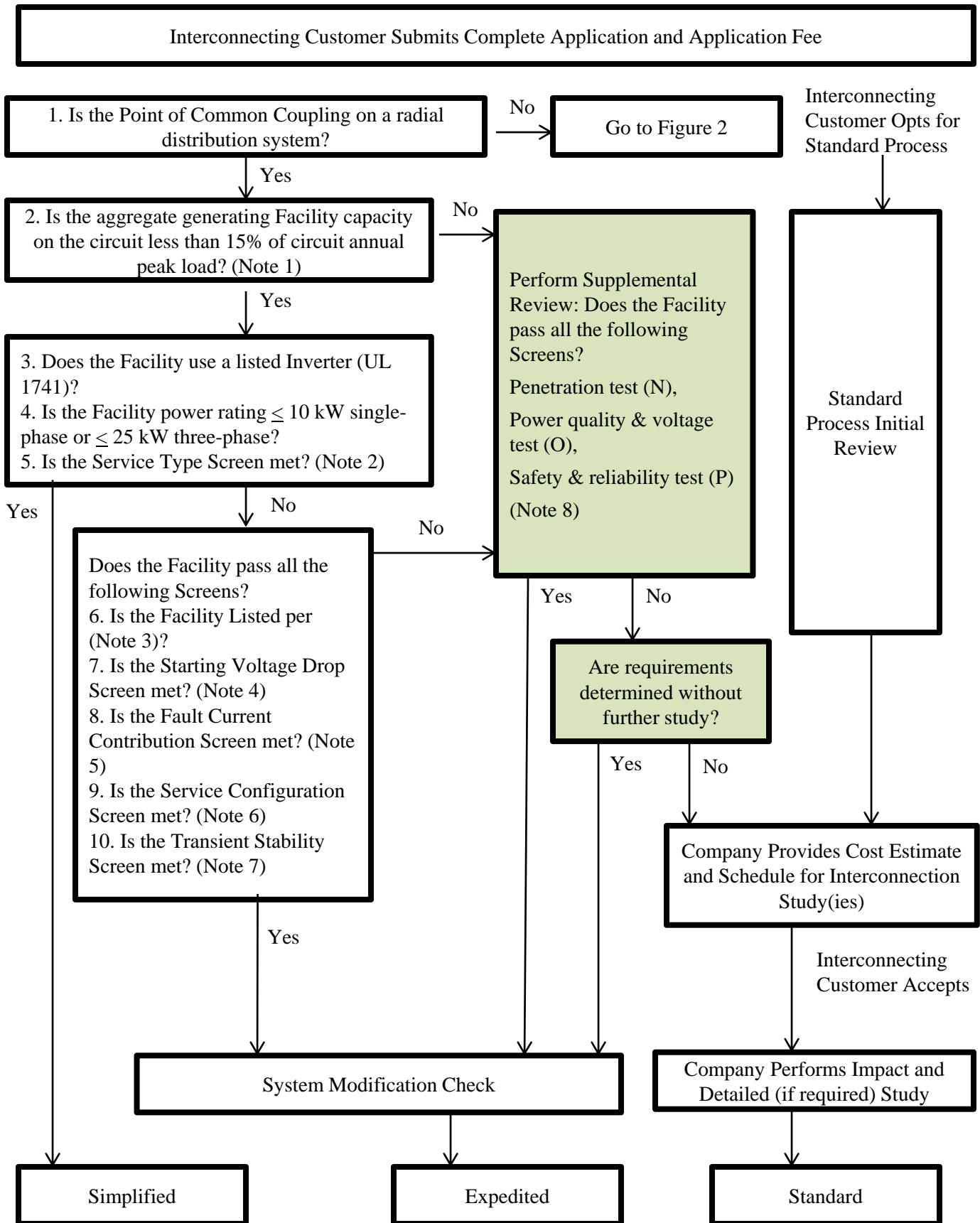
Discussion and Resolution – Named Working Group:

Priority Classifications

Emergency Priority	Proposed change to be filed ASAP to address an obvious flaw in the current tariff
High Priority	Proposed Changes / Enhancements to be filed with report to DPU
Low Priority	Proposed Changes / Enhancements to be developed over time

Please submit this form via e-mail to _____.

Figure 1 – Schematic of Massachusetts DG Interconnection Process



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2. **Supplemental Review Screens**

The Supplemental Review consists of Screens N through P. 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 Detailed Studies are required. In certain instances, Distribution Provider may be able to identify the necessary solution and determine that Detailed Studies are unnecessary. Some examples of solutions that may be available to mitigate the impact of a failed Screen are:

1. Replacing a fixed capacitor bank with a switched capacitor bank.
2. Adjustment of line regulation settings.
3. Simple reconfiguration of the distribution circuit.

a. **Screen N: 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 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?

- If yes (pass), continue to Screen O.
- If no (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen O. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

Note 1: If none of the above options are available, this screen defaults to Screen N.

Note 2: 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 generation systems with no battery storage use daytime minimum load (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.

Note 3: When this screen is being applied to a NEM Generating Facility, the net export in kW, if known, that may flow across the Point of Common Coupling into Distribution Provider's Distribution System will be considered as part of the aggregate generation.

Note 4: Distribution Provider will not consider as part of the aggregate generation for purposes of this screen Generating Facility capacity known to be already reflected in the minimum load data.

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Note 5: NEM Generating Facilities with net export less than or equal to 500 kW that may flow across the Point of Common Coupling into Distribution Provider's Distribution or Transmission System will not be studied in the Transmission Cluster Study Process, but may be studied under the Independent Study Process.

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.

b. Screen O: 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 Commission Rule 2 and/or Conservation Voltage Regulation voltage 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 P.
 - If no to any of the above (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen P. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

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).

c. Screen P: 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 Detailed Study?

- If yes (fail), review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Section G.3.
- If no (pass), Supplemental Review is complete.

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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:

1. Generation energy source
2. Modes of synchronization
3. Unique system topology
4. Possible impacts to critical load customers
5. 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:

1. Does the Line Section have significant minimum loading levels dominated by a small number of customers (i.e. several large commercial customers)?
2. Is there an even or uneven distribution of loading along the feeder?
3. 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)?
4. 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?
5. 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?
6. Does the Generating Facility utilize Certified anti-islanding functions and equipment?