

# Preliminary Draft 7.26.05

This draft includes the cumulative “redlines” through 7/19/05. It does not include SEIAs redline provided on 7/20/05.

## PRELIMINARY DRAFT MADRI STANDARD SMALL GENERATOR INTERCONNECTION PROCEDURES

August 2005

### Table of Contents (TO BE UPDATED)

1.0	Scope .....	1
2.0	Definitions.....	1
3.0	General Interconnection Provisions.....	8
4.0	Level 1 Interconnection Review.....	11
5.0	Level 2 Interconnection Review .....	13
6.0	Level 3 Interconnection Review.....	17
	APPENDIX 1 Interconnection Request Form 10 kVA and Less.....	22
	APPENDIX 2 Interconnection Request Form >10 kVA to 10 MVA.....	29
	APPENDIX 3 Feasibility Study Agreement.....	31
	APPENDIX 4 Impact Study Agreement.....	33
	APPENDIX 5 Facilities Study Agreement.....	35
	APPENDIX 6 Certificate of Completion.....	37
	APPENDIX 7 Standard Small Generator Interconnection Agreement.....	39
	APPENDIX 8 PJM Small Generator Technical Requirements & Standards.....	47

## INTERCONNECTION PROCEDURES FOR SMALL GENERATOR SYSTEMS LESS THAN 10.0 MVA

### 1. Scope

The Standard Small Generator Interconnection Procedures set forth herein establish requirements for the interconnection of Small Generator Facilities, with an Electric Nameplate Capacity rating of ten MVA or less operating in Parallel with an Electric Distribution Company, that at the date of the Interconnection Request are not required to execute an Interconnection Agreement with PJM Interconnection (PJM). However, nothing in these procedures shall prevent PJM from subsequently requiring an Interconnection Customer to enter into a separate Interconnection Agreement with PJM if the Small Generator Facility subsequently starts participating in a PJM market or otherwise falls under the scope of PJM Interconnection requirements.

Small Generator Facilities that are not designed to operate in Parallel or do not operate in Parallel, are not subject to these procedures.

### 2. Definitions

When used with initial capitalization, the following terms shall have the meanings specified or referred to below. Terms used in this document with initial capitalization that are not defined below shall have the meanings specified in the section in which they are used

**Adverse System Impact** shall mean the negative effects due to technical or operational limits on conductors or equipment being exceeded that may compromise the safety and reliability of the Electric Distribution System.

**Affected System** shall mean an electric distribution system owned or operated by another EDC that may be affected by the proposed interconnection.

**Area Network** means a type of electric distribution system served by multiple transformers interconnected in an electrical network circuit, which is generally used in large metropolitan areas that are densely populated, in order to provide high reliability of service. This term has the same meaning as the term “distribution secondary grid network” as stated in IEEE standard 1547 Section 4.1.4 (published July 2003), as amended and supplemented.

**Business Day** shall mean Monday through Friday, excluding Federal Holidays.

**Calendar Day** shall mean any day including Saturday, Sunday or a Federal Holiday.

**Certificate of Completion** means the certificate in the form provided in Appendix [6].

**Certified** means the equipment that satisfies the requirements of Appendix [9]

**Electric Nameplate Capacity** means the net maximum or net instantaneous peak electric output capability measured in volt-amperes of a Small Generator Facility as designated by the manufacturer.

**Electric Distribution Company** or **EDC** means the electric utility entity that owns the Electric Distribution System.

**Electric Distribution System** means the facilities and equipment used to transmit electricity to ultimate usage points such as homes and industries from interchanges with higher voltage transmission networks that transport bulk power over longer distances. The voltage levels at which Electric Distribution Systems operate differ among areas but generally carry less than 69 kilovolts of electricity. Electric Distribution System has the same meaning as the term Area EPS defined in 3.1.6.1 of IEEE 1547.

**Fault Current** means the electrical current that flows through a circuit during an electrical fault condition. A fault condition occurs when one or more electrical conductors contact ground and/or each other. Types of faults include phase to ground, double-phase to ground, three-phase to ground, phase-to-phase, and three-phase. A Fault Current is several times larger in magnitude than the current that normally flows through a circuit.

**IEEE 1547** means the most current official published version of IEEE Std 1547 (2003) "Standard for Interconnecting Distributed Resources with Electric Power Systems" available at [www.ieee.org](http://www.ieee.org).

**IEEE 1547.1** means the most current official published version of IEEE Std 1547.1 (2005) "Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems" available at [www.ieee.org](http://www.ieee.org).

**Interconnection Agreement** means an agreement between an Interconnection Customer and an Electric Distribution Company, which governs the connection of the Small Generator Facility to the Electric Distribution System, as well as the ongoing operation of the Small Generator Facility after it is connected to the

system.

**Interconnection Customer** means any entity, including the Electric Distribution Company, that proposes to interconnect a Small Generator Facility to an Electric Distribution System.

**Interconnection Facilities** shall mean the Electric Distribution Company's Interconnection Facilities and the Customer's Interconnection Equipment. Collectively, Interconnection Facilities include all facilities and equipment between the Small Generator Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Small Generator Facility to the Electric Distribution Company's Electric Distribution System.

**Interconnection Facilities Study** shall mean a study conducted by the Electric Distribution Company or a third party consultant for the Interconnection Customer to determine a list of facilities (including Electric Distribution Company's Interconnection Facilities and required upgrades to the Electric Distribution System as identified in the Interconnection System Impact Study), the cost of those facilities, and the time required to interconnect the Small Generator Facility with the Electric Distribution Company's Electric Distribution System. The scope of the study is defined in Section [6.6] below of the Standard Small Generator Interconnection Procedures.

**Interconnection Facilities Study Agreement** shall mean the form of agreement contained in Appendix [5].

**Interconnection Feasibility Study** shall mean a preliminary evaluation of the system impact and cost of interconnecting the Small Generator Facility to the Electric Distribution Company's Electric Distribution System, the scope of which is described in Section [6.4]

**Interconnection Feasibility Study Agreement** shall mean the form of agreement contained in Appendix [3].

**Interconnection Request** shall mean an Interconnection Customer's request, in the form of Appendix [1] or [2] to interconnect a new Small Generator Facility, or to increase the capacity of, or operating characteristics of an existing Small Generator Facility that is interconnected with the Electric Distribution Company's Electric Distribution System.

**Interconnection Study** shall mean any of the following studies: the Interconnection Feasibility Study, the Interconnection System Impact Study, and the Interconnection Facilities Study.

**Interconnection System Impact Study** shall mean an engineering study that evaluates the impact of the proposed interconnection on the safety and reliability

of Electric Distribution Company's Electric Distribution System and, if applicable, an Affected System. The study shall identify and detail the system impacts that would result if the Small Generator Facility were interconnected without project modifications or system modifications, focusing on the Adverse System Impacts identified in the Interconnection Feasibility Study, or to study potential impacts, including but not limited to those identified in the Scoping Meeting. The scope of the study is defined in 6.5 below.

**Interconnection System Impact Study Agreement** shall mean the form of agreement contained in Appendix [4].

**kW** means kilowatts, a unit of power representing 1,000 watts. A kW equals 1/1000 of a MW, as defined herein.

**KVA** means one thousand volt-amperes and is equivalent to one kW at unitary power factor

**Line Section** means that portion of a EDC's distribution system connected to an Interconnection Customer, bounded by automatic sectionalizing devices or the end of the distribution line.

**MW** means megawatts, a unit of power representing 1,000,000 watts. A megawatt equals 1000 kW.

**MVA** means one million volt-amperes and is equivalent to one MW at unitary power factor

**Nationally Recognized Testing Laboratory** or **NRTL** means a qualified private organization that meets the requirements of OSHA regulations. NRTLs perform independent safety testing and product certification. Each NRTL must meet the requirements as set forth by OSHA in the NRTL program. NRTLs may be based in the USA or in other countries. A listing of current NRTLs may be found at the OSHA web site <http://www.osha.gov/dts/otpc/nrtl/>.

**Parallel Operation** or **Parallel** occurs when a Small Generator Facility is connected electrically to the Electric Distribution System and the potential exists for electricity to flow from the Small Generator Facility to the Electric Distribution System. This may be contrasted with a stand-alone generator that operates isolated from the Electric Distribution System.

**Party or Parties** shall mean Electric Distribution Company, Interconnection Customer or any combination of the above.

**Point of Common Coupling** The point where the Customer's Interconnection Equipment connects to the Electric Distribution System at which harmonic limits or other operational characteristics are applied.

**Point of Interconnection** means the point where the Interconnection Facilities connect to the Electric Distribution Company's Electric Distribution System.

**PJM Interconnection LLC** or **PJM** means FERC approved regional transmission organization that operates the electric transmission system.

**PJM Small Generator Technical Requirements and Standards** means the most current version of PJM's interconnection technical requirements applicable to small generators 10 MVA or smaller. A copy of these requirements, effective as of **[Date 2- 10 MVA Approved]** are provided in Appendix **[8]**. These technical requirements are also available at [www.pjm.com](http://www.pjm.com) .

**Queue Position** shall mean the order of a valid Interconnection Request, relative to all other pending valid Interconnection Requests, that is established based upon the date and time of receipt of the valid Interconnection Request by the Electric Distribution Company. An Interconnection Request shall not be deemed to be invalid by virtue of its being finally evaluated under different procedures than those under which it was originally considered, e.g. an Interconnection Request originally submitted as a Level II Interconnection Request but eventually evaluated under Level III procedures is still a valid interconnection request and is to be assigned a Queue Position based on the date of its original submission as a Level II Interconnection Request.

**Scoping Meeting** shall mean the meeting between representatives of the Interconnection Customer and Electric Distribution Company conducted for the purpose of discussing alternative interconnection options, to exchange information including any Electric Distribution System data and earlier study evaluations that would be reasonably expected to impact such interconnection options, to analyze such information, and to determine the potential feasible Points of Interconnection.

**Small Generator Facility** means the equipment used by an Interconnection Customer to generate, or store electricity. A Small Generator Facility has an Electric Capacity Nameplate rating of 10 MVA or less and typically includes an electric generator, prime mover, and/or an equipment package to monitor and manage electricity.

**Spot Network** has the same meaning as assigned to the term under IEEE Standard 1547 Section 4.1.4, (published July 2003), as amended and supplemented, which is incorporated herein by reference. IEEE standard 1547 can be obtained through the IEEE website at [www.ieee.org](http://www.ieee.org). As of {effective date of this rule}, IEEE Standard 1547 defined "Spot Network" as "a type of

electric distribution system that uses two or more inter-tied transformers to supply an electrical network circuit." A Spot Network is generally used to supply power to a single customer or a small group of customers.

**Standard Small Generator Interconnection Agreement (SGIA)** shall mean the form of Interconnection Agreement applicable to a level 2 or level 3 Interconnection Request pertaining to a Small Generating Facility. A Standard Small Generator Interconnection Agreement is provided in Appendix [7].

**Standard Small Generator Interconnection Procedures** means the procedures set forth in this document.

**UL 1741** means Underwriters Laboratories' standard "Inverters Converters, and Controllers for Use in Independent Power Systems" available at [www.UL.com](http://www.UL.com)

**Upgrades** shall mean the required additions and modifications to the Electric Distribution Company's Electric Distribution System at or beyond the Point of Interconnection. Upgrades do not include Interconnection Facilities.

**Witness Test** means the EDC's interconnection installation evaluation required by IEEE 1547 Section 5.3 and the EDC's witnessing of the commissioning test required by IEEE 1547 Section 5.4. For interconnection equipment that has not been Certified, the Witness Test shall also include the witnessing by the EDC of the on-site design tests as required by IEEE 1547 Section 5.1 and witnessing by the EDC of production tests required by IEEE 1547 Section 5.2. All tests witnessed by the EDC are to be performed in accordance with IEEE 1547.1

### 3. General Interconnection Provisions

- 3.1. **Applicability.** The interconnection procedures contained herein, shall apply to all Small Generator Facilities that satisfy the criteria in 3.1.1 – 3.1.3 below.
- 3.1.1. The Electric Nameplate Capacity of the Small Generator Facility is equal to or less than 10 MVA
- 3.1.2. The Small Generator Facility is not subject to the interconnection requirements of PJM
- 3.1.3. The Small Generator Facility is designed to operate in Parallel with the Electric Distribution System.
- 3.2. **Interconnection Requests.** Interconnection Customers seeking to interconnect a Small Generation Facility must submit an Interconnection Request that is to be approved by the EDC that owns the Electric Distribution System it plans to interconnection with. Interconnection Requests are to be made using one of two standardized forms. The form to be used in making an Interconnection Request for inverter based Small Generator Facilities with an Electric Nameplate Capacity of 10 KVA or less that satisfy the level 1 screening criteria in [4.4] below is included in Appendix [1]. The form to be used in making all other Interconnection Requests is included in Appendix [2].

**Fees.** The following non-refundable interconnection fees based on the Electric Nameplate Rating of the Small Generator Facility shall be paid to the EDC at the time the Interconnection Request is submitted to the EDC:

***There was a consensus that a “nominal” interconnection fee should be collected with all Interconnection Requests. The primary reason for these fees is to prevent frivolous applications and promote overall administrative efficiency. No consensus was reached on an appropriate level for fees and it was suggested that a final determination of fee levels should be left for individual states.***

***First Energy disagreed with the consensus opinion and suggested that fees should be based on costs that the EDC incurred to process Interconnection Requests and administer the small generator interconnection procedures.***

### 3.3. Interconnection Application Review Procedures

3.3.1. Each EDC shall review all Interconnection Requests based on the following four review procedures:

3.3.1.1. Level 1 Interconnection Review Procedures. An EDC shall use these review procedures, as more specifically set forth in **[4.0]** below, for evaluation of all Interconnection Requests to connect inverter-based Small Generation Facilities that (1) have an Electric Nameplate Capacity of 10 kVA or less, (2) the Customer Interconnection Equipment proposed for the Small Generator Facility is Certified

3.3.1.2. Level 2 Interconnection Review Procedures. An EDC shall use these review procedures, as more specifically set forth in **[5.0]** below, for evaluating all Interconnection Requests to connect Small Generation Facilities where (1) the Electric Nameplate Capacity rating is 2 MVA or less, (2) the Customer Interconnection Equipment proposed for the Small Generator Facility is Certified (3) the Small Generator Facility was reviewed under level 1 review procedures but not approved.

3.3.1.3. Level 3 Interconnection Review Procedures. With the exception of 3.3.1.4 below, an EDC shall use these review procedures, as more specifically set forth in **[6.0]** below, for evaluating all Interconnection Requests to connect Small Generation Facilities with an Electric Nameplate Rating of 10 MVA or less, which do not qualify for either the level 1 or level 2 interconnection review procedures; or, have been reviewed under level 1 or level 2 review procedures but have not been approved for interconnection.

3.3.1.4. Level 3A Interconnection Review Procedures. Interconnection Customers that do not qualify for a Level I or a Level II review may elect, when determined to be appropriate by the EDC, to be evaluated under Level 3A procedures which provide for a potentially expedited review process as set forth in **[7.0]**

### 3.4. Technical Standard.

3.4.1. The technical standard to be used in evaluating all Interconnection Requests under level 1, level 2, level 3 and level 3A reviews, unless otherwise provided for in these procedures, is PJM's Small Generator Technical Requirements and Standards as those standards may be modified by PJM from time to time. The PJM Small Generator Technical Requirements and Standards, effective as of March 19, 2005, are provided in Appendix **[8]** and may also be found at [www.PJM](http://www.PJM).

### 3.5. Other General Requirements

- 3.5.1. If the Interconnection Request is for a Small Generator Facility that includes multiple energy production devices at a site for which Interconnection Customer seeks a single Point of Interconnection, the Interconnection Request shall be evaluated on the basis of the aggregate capacity of the Electric Nameplate Ratings of multiple devices.
- 3.5.2. If the Interconnection Request is for an increase in capacity for an existing Small Generator Facility, the Interconnection Request shall be evaluated on the basis of the new total Electric Nameplate Rating of the Small Generator Facility.
- 3.5.3. EDC shall maintain records of all Interconnection Requests received, the times required to complete Interconnection Request approvals and disapprovals, and justifications for the actions taken on the Interconnection Requests. EDC shall keep such records on file for a minimum of three years.
- 3.5.4. To assist a prospective Interconnection Customer, EDC shall designate a contact person from whom information on the Interconnection Request and about EDC's Electric Distribution System can be obtained through informal requests regarding a proposed project. Such information should include studies and other materials useful to an understanding of the feasibility of interconnecting a Small Generation Facility at a particular point on EDC's Electric Distribution System, except to the extent providing such materials would violate security requirements or confidentiality agreements, or be contrary to law or state or federal regulations. EDC shall comply with reasonable requests for access to or copies of such studies.
- 3.5.5. EDC shall notify in writing any potential Affected System of the interconnection Request. EDC shall invite representatives of all Affected Systems to all meetings held with Interconnection Customer as required by these procedures. EDC shall coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems and include those results in the applicable study within the time frame specified in these procedures. Interconnection Customer shall cooperate with EDC in all matters related to the conduct of studies and the determination of modifications to Affected Systems. An Affected System that is an EDC itself shall cooperate with in all matters related to the conduct of studies and the determination of modifications to Affected Systems.

The failure of an Affected System to use reasonable efforts to cooperate or participate shall not be grounds for a delay in processing the interconnection request.

- 3.5.6. Once an Interconnection Request is deemed complete, any material modification to the proposed Small Generator Facility, Interconnection Customer's Interconnection Facilities, or site of the interconnection not agreed to in writing by EDC, shall require submission of a new Interconnection Request.
- 3.5.7. If the Interconnection Customer is not currently a customer of the EDC it shall provide proof of site control evidenced by a property tax bill, deed or a lease agreement. [Note: this requirement should get added to the interconnection request forms]
- 3.5.8. EDC may propose to interconnect more than one Small Generator Facility at a single Point of Interconnection in order to minimize costs, and shall not unreasonably refuse a request to do so. However, an Interconnection Customer may elect to pay the entire cost of separate Interconnection Facilities.
- 3.5.9. Unless otherwise prohibited by state regulation and if required by EDC operating practices, Small Generator Facilities shall be capable of being isolated from the Electric Distribution Company by means of a lockable, visible-break isolation device accessible by the Electric Distribution Company. The isolation device shall be installed, owned, and maintained by the owner of the Small Generation Facility and located between the Small Generation Facility and the Point of Interconnection. A draw-out type circuit breaker with the provision for padlocking at the draw-out position can be considered an isolation device for purposes of this requirement. Alternatively, the Interconnection Customer, at its option, may elect to provide the EDC access to an isolation device that is contained in a building or area that may be unoccupied and locked or not otherwise readily accessible to the EDC, by providing a key in a lockbox installed by the EDC that will provide ready access to the isolation device. In such case, the Interconnection Customer shall permit the EDC to install the lockbox in a location that is readily accessible by the EDC and the Interconnection Customer shall permit the EDC to affix a placard in a location of its choosing that provides clear instructions to its operating personnel on how to gain access to the isolation device

***RON CELENTANO TO PROVIDE ALTERNATE LANGUAGE***

#### 4. Level 1 Interconnection Review

4.1. Each EDC shall adopt a level 1 interconnection review procedure set forth in 4.4 below. The EDC shall use the level 1 review procedure only for an Interconnection Request that meets all of the criteria set forth in 4.1.1-4.1.3 below:

4.1.1. The Small Generator Facility is inverter-based; and

4.1.2. The Small Generator Facility has an Electric Nameplate Capacity of 10 KVA or less; and

4.1.3. The Customer Interconnection Equipment proposed for the Small Generator Facility must be Certified

4.2. For a Small Generator Facility described at 4.1 above, the EDC shall approve interconnection under the level 1 interconnection review procedure set forth in 4.4 below if all of the level 1 screening criteria set forth in 4.3 below are met. An EDC shall not impose additional requirements not specifically authorized under this section 4.0

#### 4.3. Level 1 Screening Criteria

4.3.1. For interconnection of a proposed Small Generator Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generator Facility, on the circuit will not exceed 15 percent of the line section annual peak load as most recently measured at the sub station. Line section definition is that portion of a EDC's distribution system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line.

4.3.2. For interconnection of a proposed Small Generator Facility to the load side of Spot Network protectors, the proposed Small Generator Facility must utilize an inverter-based equipment package and, the Customer Interconnection Equipment proposed for the Small Generator Facility must be Certified and with the aggregated other inverter-based generation, must not exceed the smaller of 5% of a Spot Network's maximum load

4.3.3. If the proposed Small Generator Facility is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Small Generator Facility, will not exceed 20 kW.

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

4.3.5. No construction of facilities by the EDC on its own system will be required to accommodate the Small Generator Facility.

#### 4.4. Level 1 Interconnection Review Procedure

- 4.4.1. The Interconnection Customer submits the level 1 Interconnection Request provided in Appendix [1] filled out properly and completely.
- 4.4.2. The EDC evaluates the application for completeness and notifies the Interconnection Customer within 10 Business Days of receipt that the application is or is not complete and, if not, advises what is missing.
- 4.4.3. The EDC verifies Small Generator Facility equipment can be interconnected safely and reliably using level 1 screens set forth in 4.3. This can take up to 15 Business Days.
- 4.4.4. Unless the EDC determines and demonstrates that the Small Generator Facility cannot be interconnected safely and reliably, EDC signs application approval line on the Interconnection Request form subject to all of the conditions set forth in 4.5.5.1- 4.5.5.3 being met:
  - 4.4.4.1. The Small Generator Facility being approved by electric code officials with jurisdiction over the interconnection
  - 4.4.4.2. A Certificate of Completion being returned to the EDC; and
  - 4.4.4.3. Within ten (10) business days after receipt of the Certificate of Completion, the EDC may conduct a Witness Test. The Witness Test shall be conducted only upon reasonable notice and at a mutually convenient time. If the EDC does not conduct the Witness Test within 10 business days or within the time otherwise mutually agreed to by the Parties, the Witness Test is deemed waived.

#### 5. Level 2 Interconnection Review

- 5.1. Each EDC shall adopt a level 2 interconnection review procedure set forth in 5.4 below. The EDC shall use the level 2 interconnection review procedure for an Interconnection Request that meets the criteria in 5.1.1- 5.1.3 below:
  - 5.1.1. The Small Generator Facility has an Electric Nameplate Capacity of 2 megawatts or less; and
  - 5.1.2. The Customer Interconnection Equipment proposed for the Small Generator Facility is Certified
  - 5.1.3. The Small Generator Facility has been reviewed under level 1 procedures but not approved for interconnection.
- 5.2. For a Small Generator Facility described at 5.1 above, the EDC shall approve interconnection under the level 2 interconnection review procedure set forth in 5.4 below if all of the level 2 screening criteria set forth in 5.3 below are met. An EDC shall not impose additional requirements not specifically authorized under this section 5.0

5.3. Level II Screening Criteria

- 5.3.1. For interconnection of a proposed Small Generator Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generator Facility, on the circuit will not exceed 15 percent of the Line Section annual peak load as most recently measured at the sub station.
- 5.3.2. For interconnection of a proposed Small Generator Facility to the load side of Spot Network protectors, the proposed Small Generator Facility must utilize an inverter-based equipment package and, the Customer Interconnection Equipment proposed for the Small Generator Facility must be Certified and with the aggregated other inverter-based generation, must not exceed the smaller of 5% of a Spot Network's maximum load.
- 5.3.3. The proposed Small Generator Facility, in aggregation with other generation on the distribution circuit, will not contribute more than 10 % to the distribution circuit's maximum Fault Current at the point on the high voltage (primary) level nearest the proposed Point of Interconnection
- 5.3.4. The proposed Small Generator Facility, in aggregate with other generation on the distribution circuit, will not cause any distribution protective devices and equipment (including, but limited, to substation breakers, fuse cutouts, and line reclosers), or Interconnection Customer equipment to exceed [90%] of the short circuit interrupting capability; nor is the Interconnection Request for a circuit that already exceeds 87.5% of the short circuit interrupting capability.
- 5.3.5. The proposed Small Generator Facility's Point of Interconnection will not be on a transmission line.
- 5.3.6. Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the Interconnection Customer, including line configuration and the transformer connection to limit the potential for creating over voltages on the EDC's Electric Distribution System 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

- 5.3.7. If the proposed Small Generator Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Small Generator Facility, will not exceed 20 kW.

- 5.3.8. If the proposed Small Generator Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition will not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer.
- 5.3.9. The Small Generator Facility, in aggregate with other generation interconnected to the distribution side of a substation transformer feeding the circuit where the Small Generator Facility proposes to interconnect shall not exceed 10 MVA in an area where there are known, or posted transient stability limitations to generating units located in the general electrical vicinity (e.g. three or four distribution busses from the point of interconnection).
- 5.3.10. No construction of facilities by the Electric Distribution Company on its own system will be required to accommodate the Small Generator Facility.

#### 5.4. Level 2 Interconnection Process

- 5.4.1. Interconnection Request. Interconnection Customer shall submit to EDC an Interconnection Request in the form specified in Appendix [2] Within ten Business Days from the date of receipt of the Interconnection Request, EDC shall notify Interconnection Customer whether the request is complete. If the Interconnection Request is not complete, EDC shall at the same time provide Interconnection Customer in writing a list detailing all information that must be provided to complete the Interconnection Request. The Interconnection Customer shall have 10 Business Days, unless there is another mutually agreed upon timeframe, to provide appropriate data in order to complete the Interconnection Request or the request will be considered withdrawn. The Interconnection Request shall be deemed complete when the required information has been provided by the Interconnection Customer, or the Parties have agreed that Interconnection Customer may provide additional information at a later time.
- 5.4.2. Evaluation of the Interconnection Request under the level 2 screening criteria set forth at 5.3 will include all Small Generator Facilities that, on the date the evaluation is commenced, meet one or more of the following criteria: (1) are directly interconnected with the EDC's Electric Distribution System; (2) are interconnected with Affected Systems that may have an impact on the proposed interconnection; (3) have a pending higher Queue Position; and (4) have a signed Interconnection Agreement.
- 5.4.3. Initial Review. Within 20 Business Days after EDC notifies Interconnection Customer it has received a completed Interconnection Request, EDC shall: (1) evaluate the Interconnection Request using the level 2 screening criteria set forth at 5.3 above, (2)

review Interconnection Customer's analysis (if provided by Interconnection Customer) using the same criteria, and (3) provide Interconnection Customer with its evaluation, including a comparison of the results of its own analyses with those of Interconnection Customer (if applicable).

- 5.4.4. If EDC determines that the Interconnection Request: (1) passes the level 2 screening criteria, or (2) fails one or more of the level 2 screening criteria but determines that the Small Generator Facility can be interconnected safely and reliably, it shall provide Interconnection Customer a Standard Small Generator Interconnection Agreement provided in Appendix [7] within five Business Days after such determination.
- 5.4.5. Additional review. If EDC determines that the Interconnection Request fails the level 2 screening criteria and cannot determine that the Small Generator Facility may be interconnected safely and reliably with its Electric Distribution System, Interconnection Customer may offer to pay for an expedited additional review of the interconnection. The additional review shall not exceed six hours of EDC's engineering time (to be paid for by Interconnection Customer) and shall be completed within ten Business Days of the request. The review will determine whether minor modifications to EDC's Electric Distribution System (e.g., changing meters, fuses, relay settings) can be performed in order to enable the interconnection to be made safely and reliably. EDC shall provide Interconnection Customer with a copy of the review. If the additional review indicates that the interconnection can be made safely and reliably with minor modifications and Interconnection Customer agrees to pay these additional costs, EDC shall provide Interconnection Customer a Standard Small Generator Interconnection Agreement within five Business Days after such determination. If the review indicates that the interconnection cannot be made safely and reliably with minor modifications, the EDC shall notify the Interconnection Customer in writing, and the Interconnection Customer must affirmatively request that the interconnection request be processed under level 3 interconnection procedures set forth in Section 6.0. If the Interconnection Customer does not request the EDC to proceed within 10 Business Days, the request will be considered withdrawn.
- 5.4.6. Interconnection of the Small Generator Facility. The Interconnection Customer will have either 30 Business Days, or another mutually agreeable timeframe after receipt of the Standard Small Generator Interconnection Agreement to sign and return the Standard Small Generator Interconnection Agreement. If the Interconnection Customer does not sign the Standard Small Generator Interconnection Agreement within 30 Business Days, the request will be deemed withdrawn. After the Standard Small Generator Interconnection Agreement is signed by the Parties, interconnection of the Small Generator Facility will proceed according

to the milestones agreed to by the Parties in the Standard Small Generator Interconnection Agreement. The Interconnection Agreement shall not be final until:

- 5.4.6.1. The milestones agreed to in the Standard Small Generator Interconnection Agreement are satisfied, and
- 5.4.6.2. The Small Generator Facility is approved by electric code officials with jurisdiction over the interconnection, and
- 5.4.6.3. The Interconnection Customer provides a Certificate of Completion to the EDC, and.
- 5.4.6.4. Within ten (10) business days after receipt of the Certificate of Completion, the EDC may conduct a Witness Test. The Witness Test shall be conducted only upon reasonable notice and at a mutually convenient time. If the EDC does not conduct the Witness Test within 10 business days or within the time otherwise mutually agreed to by the Parties, the Witness Test is deemed waived.

## 6. Level 3 Interconnection Review

6.1. Each EDC shall adopt a level 3 interconnection review procedure as set forth in 6.3 below. The EDC shall use the level 3 interconnection review procedure to evaluate Interconnection Requests that meet the criteria in 6.1.1-6.1.2 below:

- 6.1.1. The Small Generator Facility has an Electric Nameplate Rating that is greater than 2MVA and no larger than 10 MVA or;
- 6.1.2. The Small Generator Facility was evaluated but not approved under a level 1 or level 2 review as provided for in 4.0 and 5.0 above.

6.2. For a Small Generator Facility meeting the criteria set forth at 6.1 above, the EDC shall use the level 3 interconnection procedures set forth in 6.3 below to determine whether or not to approve the interconnection.

## 6.3. Level 3 Interconnection Review Process

- 6.3.1. By mutual agreement of the Parties, the scoping meeting, feasibility study, impact study, or facilities studies (or any combination thereof) as set forth in these level 3 procedures may be waived.
- 6.3.2. Interconnection Request. Interconnection Customer shall submit to EDC an Interconnection Request in the form specified in Appendix **[2]** of these procedures. EDC shall notify Interconnection Customer within three Business Days of receipt of the Interconnection Request and inform Interconnection Customer of the date and time when it was received. Within ten Business Days from the date of receipt of the Interconnection Request, EDC shall notify Interconnection Customer whether the request is complete. If the Interconnection Request is not complete, EDC shall at the same time provide

Interconnection Customer in writing a list detailing all information that must be provided to complete the Interconnection Request. The Interconnection Customer shall have 10 Business Days, unless there is another mutually agreed upon timeframe, to provide appropriate data in order to complete the Interconnection Request or the Interconnection Request will be considered withdrawn. The Interconnection Request shall be deemed complete when the required information has been provided by the Interconnection Customer, or the Parties have agreed that the Interconnection Customer may provide additional information at a later time.

- 6.3.3. **Queuing Priority.** EDC shall assign a Queue Position based upon the date and time the Interconnection Request is received. The Queue Position of each Interconnection Request will be used to determine the cost responsibility for the facilities necessary to accommodate the interconnection. The Interconnection Customer shall proceed under the timeframes of this section. The EDC will notify the Interconnection Customer at the Scoping Meeting about other higher-queued Interconnection Customers.
- 6.3.4. **Scoping Meeting.** A Scoping Meeting will be held within ten Business Days, or as agreed to by the Parties, after EDC has notified Interconnection Customer that the Interconnection Request is deemed complete, or Interconnection Customer has requested their interconnection request proceed after failing the requirements of the level 2 review set forth in 5.0 . The purpose of the meeting shall be to review the Interconnection Request, existing studies relevant to the Interconnection Request, and the results of the application of the level 1 or level 2 screening criteria. Parties are expected to bring to the meeting personnel including system engineers and other resources as may be reasonably required to accomplish the purpose of the meeting.
- 6.3.5. If the Parties agree at the Scoping Meeting that an Interconnection Feasibility Study needs to be performed, EDC shall provide Interconnection Customer, no later than five Business Days after the Scoping Meeting, an Interconnection Feasibility Study Agreement including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- 6.3.6. If the Parties agree at the Scoping Meeting that an Interconnection Feasibility Study does not need to be performed, EDC shall provide Interconnection Customer, no later than five Business Days after the Scoping Meeting, an Interconnection System Impact Study Agreement including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- 6.3.7. If the Parties agree at the Scoping Meeting that an Interconnection Feasibility Study and System Impact Study do not need to be performed, EDC shall provide Interconnection Customer, no later than five Business Days after the Scoping Meeting, an Interconnection Facilities Study Agreement including an outline of the

scope of the study and a non-binding good faith estimate of the cost to perform the study.

6.4. Interconnection Feasibility Study. An Interconnection Feasibility Study will include the following analyses for the purpose of identifying a potential Adverse System Impact to EDC's Electric Distribution System that would result from the interconnection: (1) initial identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection, (2) initial identification of any thermal overload or voltage limit violations resulting from the interconnection, (3) initial review of grounding requirements and system protection, and (4) description and non-binding estimated cost of facilities required to interconnect the Small Generator Facility to EDC's Electric Distribution System in a safe and reliable manner.

6.4.1. If Interconnection Customer asks that the Interconnection Feasibility Study evaluate multiple potential points of interconnection, additional evaluations may need to be performed. All such evaluations are to be paid by Interconnection Customer.

6.4.2. An Interconnection System Impact Study shall not be required if the Interconnection Feasibility Study concludes that there is no Adverse System Impact or if it identifies an Adverse System Impact, but EDC is able to identify a remedy without the need for an Interconnection System Impact Study. Otherwise an Interconnection System Impact Study shall be required.

6.4.3. The Interconnection Feasibility Study agreement is provided in Appendix **[3]** of these procedures.

6.5. Interconnection System Impact Study. The Interconnection System Impact Study shall evaluate the impact of the proposed interconnection on the safety and reliability of EDC's Electric Distribution System and, if applicable, Affected Systems. The study shall identify and detail the system impacts that would result if the Small Generator Facility were interconnected without project modifications or system modifications, focusing on the Adverse System Impacts identified in the Interconnection Feasibility Study, or to study potential impacts, including but not limited to those identified in the Scoping Meeting. The study will consider all generating facilities that, on the date the Interconnection System Impact Study is commenced, (1) are directly interconnected with the EDC's system; (2) are interconnected with Affected Systems and may have an impact on the proposed interconnection; (3) have a pending higher queued interconnection request to interconnect to the system; or, (4) have a signed Interconnection Agreement.

6.5.1. General. The Interconnection System Impact Study will consider, as appropriate, a short circuit analysis, a stability analysis, a power flow analysis, voltage drop and flicker studies, protection and set point coordination studies, and grounding reviews. The Interconnection System Impact Study will state the underlying assumptions of the study, show the results of the analyses, and list any potential impediments to providing the requested interconnection

service. The study will indicate required Upgrades and a non-binding good faith estimate of cost and time to construct.

- 6.5.2. Distribution Interconnection System Impact Study. A distribution Interconnection System Impact Study shall be performed if a potential Distribution System Adverse System Impact is identified in the Interconnection Feasibility Study. EDC shall send Interconnection Customer an Interconnection System Impact Study Agreement within five Business Days of transmittal of the Interconnection Feasibility Study report, including an outline of the scope of the study and a good faith estimate of the cost to perform the study. The study shall incorporate a load flow study, an analysis of equipment interrupting ratings, protection coordination study, voltage drop and flicker studies, protection and set point coordination studies, and grounding reviews, and the impact on system operation, as necessary.
- 6.5.3. **[THIS SECTION PROBABLY NEEDS TO COME OUT]** Transmission Interconnection System Impact Study. Where the Interconnection Feasibility Study or a distribution Interconnection System Impact Study shows a potential Electric Distribution System Adverse System Impact, within five Business Days following transmittal of the Interconnection Feasibility Study report and/or distribution Interconnection System Impact Study Report, EDC shall notify any Affected Systems. EDC shall also send Interconnection Customer an Interconnection System Impact Study Agreement, including an outline of the scope of the study and a good faith estimate of the cost to perform the study.
- 6.5.4. **[THIS SECTION PROBABLY NEEDS TO COME OUT]** Coordinated Transmission and Distribution System Impact Studies. Where transmission and distribution facilities are owned by different entities (such as in the case of transmission-dependent utilities (TDUs)) and no single entity is in a position to conduct an Interconnection System Impact Study covering both transmission and distribution electric systems, EDC, as applicable, shall conduct the Interconnection System Impact Study. Affected Systems shall participate in the study and provide all information necessary to prepare the study.
- 6.5.5. **[THIS SECTION PROBABLY NEEDS TO COME OUT]** Interconnection System Impact Study Cost Sharing. Affected transmission and distribution providers may participate in the preparation of the Interconnection System Impact Study, with the costs of that study to be paid by the Interconnection Customer, and then divided among such entities as they may agree. All affected parties shall be afforded an opportunity to review and comment upon an Interconnection System Impact Study that covers potential Adverse System Impacts on their systems, and EDC has thirty additional Calendar Days to complete an Interconnection System Impact Study requiring review by Affected Systems.

6.5.6. The Interconnection Impact Study agreement is in Appendix [4] of these procedures.

## 6.6. Interconnection Facilities Study.

6.6.1. Within five Business Days of completion of the Interconnection System Impact Study, a report will be prepared and transmitted to Interconnection Customer along with an Interconnection Facilities Study Agreement, which shall include an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

6.6.2. The Interconnection Facilities Study shall specify and estimate the cost of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of the Interconnection Feasibility Study and Interconnection System Impact Study to interconnect the Small Generator Facility. The Interconnection Facilities Study shall also identify: (1) the electrical switching configuration of the equipment, including, without limitation, transformer, switchgear, meters, and other station equipment, (2) the nature and estimated cost of EDC's Interconnection Facilities and Upgrades necessary to accomplish the interconnection, and (3) an estimate of the time required to complete the construction and installation of such facilities.

6.6.3. Parties may agree to permit Interconnection Customer to separately arrange for a third party to design and construct the required Interconnection Facilities. In such cases, EDC may review the design of the facilities, under the provisions of the Interconnection Facilities Study Agreement. If the Parties agree to separately arrange for design and construction, and comply with any security and confidentiality requirements, EDC shall make all relevant information and required specifications available to Interconnection Customer in order to permit Interconnection Customer to obtain an independent design and cost estimate for the facilities, which must be built in accordance with such specifications.

6.6.4. Upon completion of the Interconnection Facilities Study, and with the agreement of Interconnection Customer to pay for Interconnection Facilities and Upgrades identified in the Interconnection Facilities Study, EDC shall provide Interconnection Customer a Standard Small Generator Interconnection Agreement within five Business Days.

6.6.5. The Interconnection Facility Study agreement is in Appendix [5] of these procedures.

6.7. Interconnection of the Small Generator Facility. The Interconnection Customer will have either 30 Business Days, or another mutually agreeable timeframe after receipt of the Standard Small Generator Interconnection Agreement to sign and return it. If the Interconnection

Customer does not sign the Standard Small Generator Interconnection Agreement within 30 Business Days, the request will be deemed withdrawn. After the Standard Small Generator Interconnection Agreement is signed by the Parties, interconnection of the Small Generator Facility will proceed according to the milestones mutually agreed to by the Parties in the Standard Small Generator Interconnection Agreement. The Interconnection Agreement shall not be final until

- 6.7.1.1. The milestones agreed to in the Standard Small Generator Interconnection Agreement are satisfied, and
- 6.7.1.2. The Small Generator Facility is approved by electric code officials with jurisdiction over the interconnection, and
- 6.7.1.3. The Interconnection Customer provides a Certificate of Completion to the EDC, and
- 6.7.1.4. Within ten (10) business days after receipt of the Certificate of Completion, the EDC may conduct a Witness Test. The Witness Test shall be conducted only upon reasonable notice and at a mutually convenient time. If the EDC does not conduct the Witness Test within 10 business days or within the time otherwise mutually agreed to by the Parties, the Witness Test is deemed waived.

## 7. Level 3A Interconnection Review [This section needs to be reviewed again]

- 7.1. Interconnection Customers desiring to interconnect a Small Generation Facility that do not qualify for a Level I or a Level II review may request to be evaluated under Level 3A procedures as set forth below
- 7.2. At the discretion of the EDC, the EDC may use the Level 3A review procedure for a Level 3 application to interconnect a Small Generator Facility that meets all of the following criteria:
  - 7.2.1. The Small Generator Facility has an Electric Nameplate Rating of 10 MVA or less, and
  - 7.2.2. The aggregated total of the Electric Nameplate Ratings of all of the generators on the circuit, including the proposed Small Generator Facility, is 10 MVA or less, and
  - 7.2.3. The customer generator facility will use reverse power relays or other protection functions<sup>1</sup> that prevent power flow onto the utility grid, and
  - 7.2.4. The customer generator facility will be interconnected with a radial distribution circuit, and

---

**1 Any generator connected to the EDC's electrical system may have an adverse impact, even if it is not exporting power. When a fault occurs, the generator may contribute to the fault current until fault sensing relays at the DR facility detect the fault and operate a device to remove the generator from the system. During this period this additional fault current may cause delayed clearing of utility equipment. The addition of a larger customer-generator must be carefully evaluated to determine the impact of the generator when paralleled.**

7.2.5. The customer generator facility is not served by a shared transformer.

7.3. For a customer-generator facility described in 7.2 above, the EDC may interconnect under the Level 3A review if all of the applicable requirements at 7.3.1 through 7.3.6 below are met

7.3.1. The EDC, at its sole discretion, establishes that it is appropriate to use the Level 3A review process for evaluating the Interconnection Request.

7.3.2. The aggregate generation capacity on the distribution circuit to which the customer-generator facility will interconnect, including its capacity, shall not contribute more than ten percent (10%) to the circuit's maximum fault current at the point on which the primary level that is nearest the proposed point of common coupling.

7.3.3. The aggregate generation capacity on the distribution circuit to which the customer-generator facility will interconnect, including its capacity, shall not cause any distribution protective equipment, or customer equipment on the distribution system, to exceed eighty percent (80%) of the short-circuit interrupting capability of the equipment. In addition, a customer-generator facility shall not be connected to a circuit that already exceeds eighty percent (80%) of the short circuit interrupting capability

7.3.4. If the EDC has reason to believe that the Small Generator Facility could damage equipment owned by other electric customers located in close proximity to the Small Generator Facility, the EDC shall provide the Interconnection Customer with contact information for these customers. The Interconnection Customer shall be responsible for contacting these customers and determining to the EDC's satisfaction that their equipment will not adversely affected by the Small Generator Facility.

7.3.5. If there are known or posted transient stability limits to generating units located in the general electrical vicinity of the proposed point of common coupling (e.g. 3 or 4 transmission voltage level busses), the proposed customer-generator shall be subject to a Level 3B review.

7.3.6. Using the table below, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the Interconnection Customer, including line configuration and the transformer connection to limit the potential for creating over voltages on the EDC's Electric Distribution System 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

7.4. For a Small Generator Facility failing to meet the criteria set forth at 7.3 above, the EDC shall use the level 3 interconnection procedures set forth in 6.0 above to determine whether or not to approve the interconnection.

8. Dispute Resolution

8.1. Each Party agrees to attempt to resolve all disputes regarding the provisions of these interconnection procedures promptly, equitably and in a good faith manner.

8.2. If a dispute arises with respect to the interconnection procedures that apply to the Small Generator Facility, and if the dispute cannot be resolved by the Parties within ten (10) Business Days, the Party raising the dispute shall provide written notice detailing the nature of the dispute to the other Party with a copy to the public utility commission having authority over the interconnection procedures. If within 20 days of providing such written notice, the Parties cannot resolve the dispute, the Party raising the dispute shall provide a written request for resolution of the dispute to the local public utility commission, with a copy to the other Party. The final decision of the public utility commission with respect to the dispute shall be binding on the Parties.

**Appendix 1**  
**Interconnection Request Form and Conditional Agreement**  
**Inverter-based Small Generator Facilities**  
**10 kVA and Smaller.**

**Contact Information**

Legal Name and address of Interconnection Customer applicant (or, if an Individual, Individual's Name)

Company Name: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Alternative Contact Information (if different from Applicant)

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Ownership (include % ownership by any electric utility): \_\_\_\_\_

**Facility Information**

Location (if different from above): \_\_\_\_\_

Electric Service Company: \_\_\_\_\_

Account Number (if available): \_\_\_\_\_

Inverter Manufacturer: \_\_\_\_\_ Model

Nameplate Rating: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA) \_\_\_\_\_ (AC Volts) Single  or Three   
Phase

System Design Capacity: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA)

Prime Mover: Photovoltaic  Reciprocating Engine  Fuel Cell  Turbine

Other \_\_\_\_\_

Energy Source: Solar  Wind  Hydro  Diesel  Natural Gas   
Fuel Oil  Other \_\_\_\_\_

Is the inverter Certified? Yes  No  (If yes, attach manufacturer's cut sheet showing listing and label information from the appropriate listing authority, e.g. UL 1741 listing)

Estimated Install Date: \_\_\_\_\_ Est. In-Service Date: \_\_\_\_\_

**Insurance Disclosure:** The Interconnection Customer is not required to provide general liability insurance coverage as part of this Agreement, the Standard Small Generator Interconnection Procedures, or any other Company requirement. Due to the risk of incurring damages, it is recommended that every Interconnection Customer protect itself with insurance, and insurance disclosure is required as a part of this Agreement. The Interconnection Customer hereby discloses as of the date of this agreement as follows:

(Note: Check off one of the boxes below – information only)

- The Interconnection Customer has obtained, or already has in effect under an existing policy, general liability insurance coverage for operation of the Small Generator Facility and intends to maintain such coverage for the duration of this Agreement (attach Certificate of Insurance or copy of Policy); or
- The Interconnection Customer has not obtained general liability insurance coverage for operation of the Small Generator Facility and/or is self-insured. Please read paragraphs 6 & 7 of attached terms and conditions.

**Customer Signature**

I hereby certify that, to the best of my knowledge, all of the information provided in this application is true and I agree to abide by the Terms and Conditions on the following page and return the Certificate of Completion:

Interconnecting Customer Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Conditional Approval to Interconnect Small Generator Facility**

Interconnection of the Facility is approved contingent upon the terms and conditions of this Agreement and return of a duly executed Certificate of Completion:

Application ID number: \_\_\_\_\_

Company waives Witness Test? Yes  No

Company Name: \_\_\_\_\_

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

## **Terms and Conditions for Interconnections**

1. **Construction of the Small Generator Facility.** The Interconnection Customer may proceed to construct (including operational testing not to exceed 2 hours) the Small Generator Facility once Conditional Approval to Interconnect a Small Generator Facility has been provided by the Company.
2. **Interconnection and Operation.** The Interconnection Customer may operate the Small Generator Facility and interconnect with the Company's Electric Distribution system once all of the following have occurred:
  - 2.1. **Electrical Inspection:** Upon completing construction, the Interconnection Customer will cause the Small Generator Facility to be inspected by the local electrical wiring inspector with jurisdiction.
  - 2.2. **Certificate of Completion:** The Interconnecting Customer returns the Certificate of Completion appearing as Attachment 2 to the Agreement to the Company at address noted.
  - 2.3. Company has either waived the right to Witness Test in the Interconnection Request, or completed its inspection as per the following:
    - 2.3.1. **Company Right of Inspection.** Within ten (10) business days after receipt of the Certificate of Completion, the Company may, upon reasonable notice and at a mutually convenient time, conduct a Witness Test of the Small Generator Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with applicable codes.
    - 2.3.2. If the Company does not perform the Witness Test within 10 business days or by mutual agreement of the Parties, the Witness Test is deemed waived.
  - 2.4. The Company has the right to disconnect the Small Generator Facility in the event of improper installation or failure to return Certificate of Completion.
  - 2.5. Revenue quality metering equipment must be installed and tested in accordance with applicable ANSI standards.
3. **Safe Operations, Maintenance and Testing.**

All interconnection-related functions and associated batteries shall be periodically tested at intervals specified by the manufacturer, system integrator, or the authority who has jurisdiction over the DR interconnection. Periodic test reports or a log for inspection shall be maintained.
4. **Access.** The Company shall have access to the disconnect switch and metering equipment of the Small Generator Facility at all times. The Company shall provide reasonable notice to the customer when possible prior to using its right of access.

5. **Disconnection.** The Company may temporarily disconnect the Small Generator Facility upon the following conditions:
  - 5.1. For scheduled outages upon reasonable notice,
  - 5.2. For unscheduled outages or emergency conditions
  - 5.3. If the Small Generating Small Generator Facility does not operate in the manner consistent with this Agreement.
  - 5.4. [NEW LANGUAGE TO BE PROVIDED BY SUE LEGROSThe Small Generator Facility is delisted by the Nationally Recognized Testing Laboratory that provided the listing at the time the interconnection was approved.
6. **Indemnification.** The Parties shall at all times indemnify, defend, and save the other Party harmless from, any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's action or inactions of its obligations under this agreement on behalf of the indemnifying Party, except in cases of gross negligence or intentional wrongdoing by the indemnified Party.
7. **Limitation of Liability.** Each party's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either party be liable to the other party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever.
8. **Termination.** This Agreement may be terminated under the following conditions:
  - a. **By Interconnection Customer.** The Interconnection Customer may terminate this Agreement by providing written notice to Company.
  - b. **By the Company.** The Company may terminate this Agreement (1) if the Small Generator Facility fails to operate for any consecutive 12 month period, or (2) the Customer fails to remedy a violation of terms of this Agreement.
  - c. **Permanent Disconnection.** In the event the agreement is terminated the Company shall have the right to disconnect its facilities or direct the customer to disconnect its Small Generator Facility.
9. **Dispute Resolution**
  - a. **Good Faith Resolution of Disputes.** Each Party agrees to attempt to resolve all disputes regarding the provisions of this agreement , promptly, equitably, and in a good faith manner
10. **Disputes Regarding This Agreement.** If a dispute arises with respect to this agreement, and if the dispute cannot be resolved by the Parties within ten (10) Business Days, the Party raising the dispute shall provide written notice to the other Party detailing the nature of the dispute. If the Parties can not resolve the dispute,

they may seek remedies available to them by law in the jurisdiction in which the Small Generation Facility is located. **Survival Rights.** This agreement shall continue in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

11. **Assignment/Transfer of Ownership of the Small Generator Facility:** This Agreement shall survive the transfer of ownership of the Small Generator Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies the Company.

12. **Notice**

13. **Applicable Law**

### Certificate of Completion

Installation Information

Check if owner-installed

Interconnecting Customer: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Location of Small Generator Facility (if different from above):

\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Electrician:

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

License number: \_\_\_\_\_

Date Interconnection Agreement approved by the Company: \_\_\_\_\_

Application ID number: \_\_\_\_\_

Electrical Inspection:

The system has been installed and inspected in compliance with the local Building/Electrical Code of

\_\_\_\_\_  
\_\_\_\_\_  
(appropriate governmental authority)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection):  
\_\_\_\_\_ (Note: Local procedures may differ on how to process approvals from local electric inspection officials)

Name (printed): \_\_\_\_\_

Date: \_\_\_\_\_

Person/Entity Installing The Small Generation Facility:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

\_\_\_\_\_

As a condition of interconnection you are required to send/fax a copy of this form along with a copy of the signed electrical permit to (insert Company's name below):

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Mail 1: \_\_\_\_\_

Mail 2: \_\_\_\_\_

City, State ZIP: \_\_\_\_\_

Fax No.: \_\_\_\_\_

---

Company waives Witness Test ? Yes  No

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Final Approval of Interconnection Agreement

The Certificate of Completion has been received and final approval to interconnect the Small Generation Small Generator Facility is granted under the Standard Small Generator Interconnection Procedures.

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Appendix 2 -5 - [JIM CALORE]**

**Appendix 6  
Certificate of Completion**

Installation Information

Check if owner-installed

Interconnecting Customer: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Location of Facility (if different from above):  
\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Electrician:

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

License number: \_\_\_\_\_

Date Interconnection Agreement approved by the Company: \_\_\_\_\_

Application ID number: \_\_\_\_\_

Electrical Inspection:

The system has been installed and inspected in compliance with the local  
Building/Electrical Code of

\_\_\_\_\_  
\_\_\_\_\_  
(appropriate governmental authority)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection):

\_\_\_\_\_

Name (printed): \_\_\_\_\_

Date: \_\_\_\_\_

Person/Entity Installing The Small Generation Facility:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

As a condition of interconnection you are required to send/fax a copy of this form along with a copy of the signed electrical permit to (insert Company's name below):

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Mail 1: \_\_\_\_\_

Mail 2: \_\_\_\_\_

City, State ZIP: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Company waives Witness Test ? Yes  No

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

---

Final Approval of Interconnection Agreement

The Certificate of Completion has been received and final approval to interconnect the Small Generation Facility is granted under the Standard Small Generator Interconnection Procedures.

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**APPENDIX 7 – JIM CALORE**

Appendix 8  
PJM Small Generator Requirements and Procedures  
Available for download at [www.pjm.com](http://www.pjm.com)

Appendix 9  
Certification Requirements for Generator Interconnection Equipment

1. Small Generating Facility equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation if it has been tested in accordance IEEE 1547.1 in compliance with the appropriate codes and standards referenced below in attachment "A" by any Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Occupational Safety and Health Administration to test and certify interconnection equipment pursuant to the relevant codes and standards listed in attachment "A", (2) it has been labeled and is publicly listed by such NRTL at the time of the interconnection application, and (3) such NRTL makes readily available for verification all test standards and procedures it utilized in performing such equipment certification, and, with consumer approval, the test data itself. The NRTL may make such information available on its and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.
2. The Interconnection Customer must verify that the intended use of the equipment falls within the use or uses for which the equipment was tested, labeled, and listed by the NRTL.
3. Certified equipment shall not require further type-test review, testing, or additional equipment to meet the requirements of this interconnection procedure; however, nothing herein shall preclude the need for an on-site Witness Test nor follow-up production testing by the Interconnection Customer.
4. If the Certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and is consistent with the testing and listing specified for this type of interconnection equipment.
5. Provided the generator or electric source, when combined with the equipment package, is within the range of capabilities for which it was tested by the NRTL, and does not violate the interface components' labeling and listing performed by the NRTL, no further design review, testing or additional equipment on the customer side of the Point of Interconnection shall be required to meet the requirements of this interconnection procedure.
6. An equipment package does not include equipment provided by the utility.

IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity)

UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems

IEEE Std 929-2000 IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems

NFPA 70 National Electrical Code

IEEE Std C37.90.1-1989 (R1944) IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems

IEEE Std C37.90.2 (1995) IEEE Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers

IEEE Std C37.108-1989 (R2002) IEEE Guide for the Protection of Network Transformers

IEEE Std C57.12.44-2000, IEEE Standard Requirements for Secondary Network Protectors

IEEE Std C62.41.2-2002, IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits

IEEE Std C62.45-1992 (R2002) IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000V) and Less) Power Circuits

ANSI C84.1-1995 Electric Power Systems and Equipment -Voltage Ratings (60 Hertz)

IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic  
NEMA MG 1-1998, Motors and Small Resources, Revision 3

IEEE Std 519-1992, IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems

NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1