

Piedmont Electric Membership Corporation

**INTERCONNECTION PROCEDURES,
FORMS, AND AGREEMENTS**

**Adopted by the Board of Directors
Effective July 2011**

These materials, which shall govern interconnection of distributed generation to the distribution system of [insert cooperative name], are intended to satisfy the requirements of the Final Rule of the Rural Utilities Service of the U.S. Department of Agriculture re "Interconnection of Distributed Resources," 74 *Fed. Reg.* 32406 (July 8, 2009) (codified at 7 C.F.R. Part 1730, Subpart C)



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Section 1. General Requirements

1.1 Applicability

- 1.1.1 This Standard contains the requirements for interconnection of Distributed Resources and parallel operation of Generation Facilities with the distribution system of Piedmont Electric Membership Corporation.
- 1.1.1.1 A request to interconnect a Distributed Resource that has a certified inverter-based Generating Facility no larger than 25 kW shall be evaluated under the Section 2—25 kW Inverter Interconnection Process. (See Attachments 3 and 4 for certification criteria.)
- 1.1.1.2 A request to interconnect a Distributed Resource that has a certified Generating Facility larger than 25kW and no larger than 1000 kW shall be evaluated under the Section 3—Fast Track Interconnection Process. (See Attachments 3 and 4 for certification criteria.)
- 1.1.1.3 A request to interconnect a Distributed Resource larger than 1000 kW / 1 MW, or a Generating Facility that does not pass the Fast Track Interconnection Process, shall be evaluated under the Section 4—Study Process. The study process shall be subject to the requirements of the applicable transmission owner, and may require special metering and other equipment as required by the transmission owner on a case by case basis as determined by the study process.
- 1.1.2 Capitalized terms used herein shall have the meanings specified in the Glossary of Terms in Attachment 1 or the body of these procedures.
- 1.1.3 This Standard shall not apply to Generating Facilities already interconnected or approved for interconnection as of the effective date of this Standard, unless so agreed to by the Cooperative and the Interconnection Member. However, this Standard shall apply if the Interconnection Member proposes Material Modifications or transfers ownership of the Generating Facility after that date.

1.2 Pre-Request

On its Internet website, the Cooperative will provide a means to contact an appropriate representative to address informal requests and questions regarding interconnection. Typically, the name, telephone number, and e-mail address of a contact employee(s) will be provided.

1.3 Interconnection Request

The Interconnection Member shall submit its Interconnection Request to the Cooperative, together with the non-refundable processing fee or deposit specified in the Interconnection Request. If the Interconnection Request does not provide sufficient information, the Cooperative may request that the Interconnection Member provide supplemental information. If the Interconnection Member does not provide the necessary information within a reasonable period following such a request, the Interconnection Request will be deemed withdrawn.

1.4 Modification of the Interconnection Request

Material Modification of the Interconnection Request by the Interconnection Request is not permitted nor effective absent written agreement of the Cooperative, and may be deemed a

withdrawal of the Interconnection Request such that re-submission of a new Interconnection Request may be required.

1.5 Site Control

Documentation of site control will not ordinarily be required when submitting an Interconnection Request. However, the Cooperative may request satisfactory evidence of site control before the Cooperative makes a significant investment in Interconnection Facilities or Distribution Upgrades, or if two or more proposed Generating Facilities are competing for capacity on the same circuit. Further, the Cooperative will typically require the Interconnection Member to pay in advance for such investment or to defray the costs of upgrades to, or installation of, facilities necessary for interconnection. The Interconnection Member that can demonstrate site control will have a higher Queue Position than one that is on the same circuit and cannot demonstrate site control. The Interconnection Member must submit documentation of site control to the Cooperative at or before the time of final execution of the Interconnection Agreement. Site control may be demonstrated through:

- 1.5.1 Ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing the Generating Facility;
- 1.5.2 An option to purchase or acquire a leasehold site for such purpose; or
- 1.5.3 An exclusive or other business relationship between the Interconnection Member and the entity having the right to sell, lease, or grant the Interconnection Member the right to possess or occupy a site for such purpose.

1.6 Queue Position

The Cooperative shall assign a Queue Position based upon the order of submission of the Interconnection Request. The Queue Position of each Interconnection Request will be used to determine the cost responsibility for the Upgrades necessary to accommodate the interconnection. At the Cooperative's option, Interconnection Requests may be studied serially or in clusters for the purpose of the System Impact Study, should one be required. (See Section 4.4)

1.7 Interconnection Requests Submitted Prior to the Effective Date of these Procedures

Nothing in this Standard affects an Interconnection Member's Queue Position assigned before the effective date of these procedures. The Parties agree to complete work on any interconnection study agreement executed prior to the effective date of these procedures in accordance with the terms and conditions of that interconnection study agreement. Any new studies or other additional work will be completed pursuant to this standard.

Section 2. 25 kW Inverter Process for Interconnecting Certified Inverter-Based Generating Facilities No Larger than 25 kW

2.1 Applicability

The 25 kW Inverter Process is available to an Interconnection Member proposing to interconnect its inverter-based Generating Facility with the Cooperative's System if the Generating Facility is no larger than 25 kW and if the Interconnection Member's proposed Generating Facility meets the codes, standards, and certification requirements of Attachments 3 and 4 of these procedures, or the Cooperative has reviewed the design or tested the proposed Generating Facility and is satisfied that it is safe to operate. The Cooperative is requiring the Interconnection Member to install a manual load-break disconnect switch or safety switch (External Disconnect Switch) as a

clear visible indication of switch position between the Cooperative System and the Interconnection Member. (See also Section 5.16 and the Glossary of Terms).

2.2 Interconnection Request

The Interconnection Member shall complete the Interconnection Request for a certified inverter-based Generating Facility no larger than 25 kW (see Attachment 5) and submit it to the Cooperative, together with the non-refundable processing fee specified in the Interconnection Request.

The Cooperative shall verify that the Generating Facility can be interconnected safely and reliably as provided in the Fast Track Process (See Section 3.3), and then advise the Interconnection Member.

2.3 Certificate of Completion

2.3.1 After installation of the Generating Facility, the Interconnection Member shall return the Certificate of Completion to the Cooperative. (See Attachment 5). Prior to parallel operation, the Cooperative may inspect the Generating Facility for compliance with standards, which will typically include a witness test, and may schedule appropriate metering replacement, in its sole discretion.

2.3.2 The Cooperative shall notify the Interconnection Member in writing that interconnection of the Generating Facility is authorized. If the witness test is not satisfactory, the Cooperative has the right to disconnect the Generating Facility. The Interconnection Member has no right to operate in parallel with the Cooperative until a witness test has been performed, or previously waived on the Interconnection Request.

2.3.3 Interconnection and parallel operation of the Generating Facility is subject to the Terms and Conditions stated in Attachment 5 of these procedures.

2.4 Contact Information

The Interconnection Member must provide the contact information for the legal applicant (i.e., the Interconnection Member). If another entity is responsible for interfacing with the Cooperative, that contact information must also be provided on the Interconnection Request.

2.5 Ownership Information

The Interconnection Member shall provide the legal name(s) of the owner(s) of the Generating Facility.

Section 3. Fast Track Process for Interconnecting Certified Generating Facilities Larger than 25 kW and No Larger than 1000 kW / 1 MW

3.1 Applicability

The Fast Track Process is available to an Interconnection Member proposing to interconnect its Generating Facility with the Cooperative's System if the Generating Facility is larger than 25 kW and no larger than 1000 kW / 1 MW and if the Interconnection Member's proposed Generating Facility meets the codes, standards, and certification requirements of Attachments 3 and 4 of these procedures, or the Cooperative has reviewed the design or tested the proposed Generating Facility and is satisfied that it is safe to operate.

3.2 Initial Review

After the Cooperative notifies the Interconnection Member it has received a complete Interconnection Request, the Cooperative will perform an initial review using the screens described below in Section 3.3.

3.3 Screens

- 3.3.1 The proposed Generating Facility's Point of Interconnection must be on a portion of the Cooperative's Distribution System.
- 3.3.2 For interconnection of a proposed Generating Facility to a radial distribution circuit, the aggregated generation on the circuit, including the proposed Generating Facility, shall not exceed 15% of the line section annual peak load as most recently measured at the substation. A line section is that portion of a Cooperative's System connected to a Member bounded by automatic sectionalizing devices or the end of the distribution line.
- 3.3.3 The proposed Generating Facility, in aggregation with other generation on the distribution circuit, shall 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 change of ownership.
- 3.3.4 The proposed Generating Facility, in aggregate with other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts, and line reclosers), or Interconnection Member equipment on the system to exceed 87.5% of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5% of the short circuit interrupting capability.
- 3.3.5 The table below will be used to 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 Member, including line configuration and the transformer connection to limit the potential for creating over-voltages on the Cooperative's 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	Three-phase or single-phase, phase-to-phase	FAIL Screen
Three-phase, four wire	Effectively-grounded three-phase or single-phase, line-to-neutral	PASS Screen

- 3.3.6 If the Generating Facility system is integrated with storage, the inverter must be certified so as to rule out any risk of backfeeding.
- 3.3.7 If the proposed Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Generating Facility, shall not exceed 25 kW.
- 3.3.8 If the proposed Generating 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.

- 3.3.9 The Generating Facility, in aggregate with other generation interconnected to the transmission side of a substation transformer feeding the circuit where the Generating Facility proposes to interconnect shall not exceed 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., three or four transmission busses from the point of interconnection).
- 3.3.10 No construction of facilities by the Cooperative on its own System shall be required to accommodate the Generating Facility.
- 3.3.11 If the proposed interconnection passes the screens, the Interconnection Request shall be approved and the Cooperative will provide the Interconnection Member an executable Interconnection Agreement after the determination, as described further in Section 5.6.
- 3.3.12 If the proposed interconnection fails the screens, but the Cooperative determines that the Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the Cooperative may provide the Interconnection Member an executable Interconnection Agreement, to be completed in accordance with the timeline provided in Section 5.6.
- 3.3.13 If the proposed interconnection fails the screens, but the Cooperative does not or cannot determine from the initial review that the Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Member is willing to consider minor modifications or further study, the Cooperative may provide the Interconnection Member with the opportunity to attend a Member options meeting.

3.4 Member Options Meeting

If the Cooperative determines the Interconnection Request cannot be approved without minor modifications at minimal cost; or a supplemental study or other additional studies or actions; or at significant cost to address safety, reliability, or power quality problems, after the determination, the Cooperative will notify the Interconnection Member of its conclusion and offer to convene a Member options meeting to review possible Interconnection Member facility modifications or the screen analysis and related results, to determine what further steps are needed to permit the Generating Facility to be connected safely and reliably. At the time of notification of the Cooperative's determination, or at the Member options meeting, the Cooperative may:

- 3.4.1 Offer to perform facility modifications or minor modifications to the Cooperative's System (e.g., changing meters, fuses, relay settings) and provide a non-binding good faith estimate of the limited cost to make such modifications to the Cooperative's System; or
- 3.4.2 Offer to perform a supplemental review if the Cooperative concludes that the supplemental review might determine that the Generating Facility could continue to qualify for interconnection pursuant to the Fast Track Process, and provide a non-binding good faith estimate of the costs of such review; or
- 3.4.3 Offer to continue evaluating the Interconnection Request under the Section 4 Study Process.

3.5 Supplemental Review

If the Interconnection Member agrees to a supplemental review, the Interconnection Member shall agree in writing within 15 Business Days of the offer, and submit a deposit for the estimated costs. The Interconnection Member shall be responsible for the Cooperative's actual costs for conducting the supplemental review. The Interconnection Member must pay any review costs that exceed the deposit within 20 Business Days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the Cooperative will return such excess without interest.

- 3.5.1 Following receipt of the deposit for a supplemental review, the Cooperative will determine if the Generating Facility can be interconnected safely and reliably.
 - 3.5.1.1 If so, the Cooperative shall forward an executable Interconnection Agreement to the Interconnection Member, to be completed in accordance with the timeline provided in Section 5.6.
 - 3.5.1.2 If so, and Interconnection Member facility modifications are required to allow the Generating Facility to be interconnected consistent with safety, reliability, and power quality standards under these procedures, the Cooperative will forward an executable Interconnection Agreement to the Interconnection Member after confirmation that the Interconnection Member has agreed to make the necessary modifications at the Interconnection Member's cost, to be completed in accordance with the timeline provided in Section 5.6.
 - 3.5.1.3 If so, and minor modifications to the Cooperative's System are required to allow the Generating Facility to be interconnected consistent with safety, reliability, and power quality standards under these procedures, the Cooperative shall forward an executable Interconnection Agreement to the Interconnection Member that requires the Interconnection Member to pay the costs of such System modifications prior to interconnection, to be completed in accordance with the timeline provided in Section 5.6.
 - 3.5.1.4 If not, the Interconnection Request will continue to be evaluated under the Section 4 Study Process, provided the Interconnection Member indicates it wants to proceed and submits the required deposit within 15 Business Days.

Section 4. Study Process

4.1 Applicability

The Study Process shall be used by an Interconnection Member proposing to interconnect its Generating Facility with the Cooperative's System if the Generating Facility is larger than 1000 kW / 1 MW, is not certified, or is certified but did not pass the Fast Track Process or the 25 kW Inverter Process. All Generating Facilities larger than 1000 kW MUST use the Study Process.

4.2 Scoping Meeting

- 4.2.1 A scoping meeting will be held as soon as practicable after the Interconnection Request is deemed complete, or as otherwise mutually agreed to by the Parties. The Cooperative and the Interconnection Member will bring to the meeting personnel, including system engineers and other resources as may be reasonably required to accomplish the purpose of the meeting. The scoping meeting may be omitted by mutual agreement.
- 4.2.2 The purpose of the scoping meeting is to discuss the Interconnection Request and review existing studies relevant to the Interconnection Request. The Parties shall further discuss

whether the Cooperative should perform a Feasibility Study or proceed directly to a System Impact Study, a Facilities Study, or an Interconnection Agreement.

- 4.2.3 If the Parties agree that a Feasibility Study should be performed, the Cooperative will provide the Interconnection Member a Feasibility Study Agreement (Attachment 6), including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- 4.2.4 If the Parties agree not to perform a Feasibility Study, but to proceed directly to a System Impact Study or Facilities Study, the Cooperative will provide the Interconnection Member either a System Impact Study Agreement (Attachment 7) or a Facilities Study Agreement (Attachment 8), as appropriate, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- 4.2.5 If the Parties agree not to perform a Feasibility Study, but to proceed directly to an Interconnection Agreement, the Cooperative shall provide the Interconnection Member an executable Interconnection Agreement, to be completed in accordance with the timeline provided in Section 5.6.

4.3 Feasibility Study

- 4.3.1 The Feasibility Study shall identify any potential adverse system impacts that would result from the interconnection of the Generating Facility.
- 4.3.2 In order to remain in consideration for interconnection, the Interconnection Member must return the executed Feasibility Study Agreement within 15 Business Days.
- 4.3.3 A deposit of the lesser of 50% of the good faith estimated Feasibility Study costs or earnest money of \$1,000 may be required from the Interconnection Member.
- 4.3.4 The scope of and cost responsibilities for the Feasibility Study are described in the Feasibility Study Agreement.
- 4.3.5 If the Feasibility Study shows no potential for adverse system impacts, the Cooperative will send the Interconnection Member a 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. If a Facilities Study is not required, the Cooperative shall send the Interconnection Member an executable Interconnection Agreement, to be completed in accordance with the timeline provided in Section 5.6.
- 4.3.6 If the Feasibility Study shows the potential for adverse system impacts, the review process shall proceed to the appropriate System Impact Studies.

4.4 System Impact Studies

- 4.4.1 The System Impact Studies shall identify and detail the electric system impacts that would result if the proposed Generating Facility were interconnected without project modifications or electric system modifications, focusing on the adverse system impacts identified in the Feasibility Study, or to study potential impacts, including, but not limited to, those identified in the scoping meeting. The System Impact Studies shall evaluate the impact of the proposed interconnection on the reliability of the electric system.
- 4.4.2 If potential adverse Distribution System impacts are identified in the scoping meeting or shown in the Feasibility Study, a Distribution System Impact Study must be performed. The Cooperative will send the Interconnection Member a Distribution System Impact Study Agreement after transmittal of the Feasibility Study or the scoping meeting if no Feasibility Study is to be performed, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

- 4.4.3 If potential adverse Transmission System impacts are identified in the scoping meeting or shown in the Feasibility Study or Distribution System Impact Study, a Transmission System Impact Study must be performed. The Cooperative will send the Interconnection Member a Transmission System Impact Study Agreement after transmittal of the Feasibility Study or Distribution System Impact Study or the scoping meeting if no Feasibility Study or Distribution System Impact Study is to be performed, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.
- 4.4.4 In order to remain under consideration for interconnection, the Interconnection Member must return an executed System Impact Study Agreement within 30 Business Days.
- 4.4.5 A deposit of the good faith estimated cost of a Distribution System Impact Study and one half of the good faith estimated cost of a Transmission System Impact Study will be required from the Interconnection Member.
- 4.4.6 The scope of and cost responsibilities for a System Impact Study are described in the System Impact Study Agreement.
- 4.4.7 If the System Impact Studies show no potential for adverse system impacts, the Cooperative will send the Interconnection Member a 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. If no additional facilities are required, the Cooperative will send the Interconnection Member an executable Interconnection Agreement, to be completed in accordance with the timeline provided in Section 5.6.

4.5 Facilities Study

- 4.5.1 The Facilities Study shall specify and estimate the cost of the equipment, engineering, procurement and construction work (including overheads) needed to implement the conclusions of Feasibility Study and/or System Impact Studies and to allow the Generating Facility to be interconnected and operated safely and reliably.
- 4.5.2 The Cooperative shall design any required Interconnection Facilities and/or Upgrades under the Facilities Study Agreement. The Cooperative may contract with consultants to perform activities required under the Facilities Study Agreement. The Interconnection Member and the Cooperative may agree to allow the Interconnection Member to separately arrange for the design of some of the Interconnection Facilities. In such cases, facilities design will be reviewed and/or modified prior to acceptance by the Cooperative, under the provisions of the Facilities Study Agreement. If the Parties agree to separately arrange for design and construction, and provided security and confidentiality requirements can be met, the Cooperative will make sufficient information available to the Interconnection Member in accordance with confidentiality and critical infrastructure requirements to permit the Interconnection Member to obtain an independent design and cost estimate for any necessary facilities.
- 4.5.3 In order to remain under consideration for interconnection, or, as appropriate, in the Cooperative's interconnection queue, the Interconnection Member must return the executed Facilities Study Agreement or a request for an extension of time within 30 Business Days.
- 4.5.4 A deposit of the good faith estimated costs for the Facilities Study may be required from the Interconnection Member.
- 4.5.5 The scope of and cost responsibilities for the Facilities Study are described in the Facilities Study Agreement.

- 4.5.6 Upon completion of the Facilities Study, and with the agreement of the Interconnection Member to pay for Interconnection Facilities and Upgrades identified in the Facilities Study, the Cooperative shall provide the Interconnection Member an executable Interconnection Agreement, to be completed in accordance with the timeline provided in Section 5.6.

Section 5. Provisions that Apply to All Interconnection Requests

5.1 Reasonable Efforts

The Cooperative will make reasonable efforts to accomplish the steps described in these procedures as soon as practicable, unless the Cooperative and the Interconnection Member agree to a different schedule, bearing in mind that such steps will be delayed, in the Cooperative's sole discretion, when necessary or appropriate to ensure uninterrupted performance of the Cooperative's operational requirements.

5.2 Disputes

- 5.2.1 The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this section.
- 5.2.2 In the event of a dispute, either Party shall provide the other Party with a written Notice of Dispute. Such Notice shall describe in detail the nature of the dispute.
- 5.2.3 As soon as practicable following issuance of the Notice of Dispute, the Parties shall schedule a meeting of senior personnel to discuss, in good faith, potential resolution of the underlying dispute.
- 5.2.4 If this meeting does not result in settlement of the dispute, the matter shall then be referred to mediation before a mediator mutually acceptable to the Parties, preferably with industry-specific experience. The mediation shall be conducted in the offices of the Cooperative. If the Parties cannot agree on a particular mediator, then they shall request that the mediator be selected by the Superior Court in the county in which the Cooperative is located.
- 5.2.5 If mediation fails to resolve the dispute, each Party is then free to pursue its legal remedies, if any.

5.3 Interconnection Metering

Any metering necessitated by the use of the Generating Facility shall be installed at the Interconnection Member's expense in accordance with all applicable regulatory requirements and the Cooperative's specifications. Issues as to meter ownership may be addressed in the particular Interconnection Agreement.

5.4 Commissioning

Commissioning tests of the Interconnection Member's installed equipment shall be performed pursuant to applicable codes and standards. The Cooperative must be given at least five Business Days written notice, or as otherwise mutually agreed to by the Parties, of the tests and may be present to witness the commissioning tests.

5.5 Confidentiality

- 5.5.1 Confidential Information shall mean any confidential and/or proprietary information provided by one Party to the other Party that is clearly marked or otherwise designated "Confidential."
- 5.5.2 Confidential Information does not include information previously in the public domain, required to be publicly submitted or divulged by Governmental Authorities, or necessary to be divulged in an action to enforce these procedures. Each Party receiving Confidential

Information shall hold such information in confidence and shall not disclose it to any third party nor to the public without the prior written authorization from the Party providing that information, except to fulfill obligations under these procedures, or to fulfill legal or regulatory requirements.

5.5.2.1 Each Party shall employ at least the same standard of care to protect Confidential Information obtained from the other Party as it employs to protect its own Confidential Information.

5.5.2.2 Each Party is entitled to equitable relief, by injunction or otherwise, to enforce its rights under this provision to prevent the release of Confidential Information without bond or proof of damages, and may seek other remedies available at law or in equity for breach of this provision.

5.5.3 If information is requested by the Commission from one of the Parties that is otherwise required to be maintained in confidence pursuant to these procedures, the Party shall provide the requested information to the Commission within the time provided for in the request for information. In providing the information to the Commission, the Party may request that the information be treated as confidential and non-public in accordance with North Carolina law and that the information be withheld from public disclosure.

5.6 Interconnection Agreement

After receiving an Interconnection Agreement from the Cooperative, the Interconnection Member shall have 30 Business Days, or another mutually agreeable timeframe, to sign and return the Interconnection Agreement. If the Interconnection Member does not sign the Interconnection Agreement within such time, the Interconnection Request shall be deemed withdrawn. The Cooperative may waive the withdrawal if no other Interconnection Requests are pending for Generating Facilities that propose to interconnect to the same circuit on the Cooperative's System. After the Parties sign the Interconnection Agreement, the interconnection of the Generating Facility shall proceed under the provisions of the Interconnection Agreement.

5.7 Coordination with Affected Systems

The Cooperative will typically coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System operators and, if possible, include those results (if available) in its applicable studies within a reasonable timeframe. The Cooperative will endeavor to include such Affected System operators in all meetings held with the Interconnection Member. The Interconnection Member will cooperate with the Cooperative in all matters related to the conduct of studies and the determination of modifications to Affected Systems.

5.10 Capacity of the Generating Facility

- 5.10.1 If the Interconnection Request is for an increase in capacity for an existing Generating Facility, the Interconnection Request shall be evaluated on the basis of the new total capacity of the Generating Facility.
- 5.10.2 If the Interconnection Request is for a Generating Facility that includes multiple energy production devices at a site for which the Interconnection Member seeks a single Point of Interconnection, the Interconnection Request shall be evaluated on the basis of the aggregate capacity of the multiple devices, unless otherwise agreed to by the Cooperative and the Interconnection Member.
- 5.10.3 The Interconnection Request shall be evaluated using the maximum rated capacity of the Generating Facility, unless otherwise agreed to by the Cooperative and the Interconnection Member.

5.11 Interconnection Agreement Non-Transferable

- 5.11.1 The Interconnection Agreement is non-transferable. The Interconnection Member shall notify the purchaser of the Generating Facility that a new Interconnection Request must be submitted to the Cooperative within 20 Business Days of the transfer of ownership or the Cooperative's Interconnection Facilities shall be removed or disabled and the Generating Facility disconnected from the Cooperative's System.
- 5.11.2 The technical requirements in the Interconnection Agreement shall be grandfathered for subsequent owners as long as (1) the Generating Facility's maximum rated capacity has not been changed; (2) the Generating Facility has not been modified so as to change its electrical characteristics; and (3) the interconnection system has not been modified.

5.12 Isolating or Disconnecting the Generating Facility

- 5.12.1 The Cooperative may isolate the Interconnection Member's premises and/or Generating Facility from the Cooperative's System when necessary in order to construct, install, repair, replace, remove, investigate or inspect any of the Cooperative's equipment or part of Cooperative's System; or if the Cooperative determines that isolation of the Interconnection Member's premises and/or Generating Facility from the Cooperative's System is necessary, in the Cooperative's sole discretion, because of emergencies, forced outages, force majeure or compliance with prudent electrical practices.
- 5.12.2 When feasible, the Cooperative will typically give the Interconnection Member reasonable notice of the isolation of the Interconnection Member's premises and/or Generating Facility from the Cooperative's System.
- 5.12.3 Notwithstanding any other provision of this Standard, if at any time the Cooperative determines that the continued operation of the Generating Facility may endanger either (1) the Cooperative's personnel or other persons or property or (2) the integrity or safety of the Cooperative's System, or otherwise cause unacceptable power quality problems for other electric consumers, the Cooperative shall have the right to isolate the Interconnection Member's premises and/or Generating Facility from the Cooperative's System without prior notice.
- 5.12.4 The Cooperative may disconnect from the Cooperative's System, without prior notice, any Generating Facility determined to be malfunctioning, or not in compliance with this Standard. The Interconnection Member must provide proof of compliance with this Standard before the Generating Facility will be reconnected.

5.13 Limitation of Liability

The Cooperative's liability to the Interconnection Member for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission hereunder, shall be limited to the amount of direct damage actually incurred. In no event shall the Cooperative be liable to the Interconnection Member for any indirect, special, incidental, consequential, or punitive damages of any kind. Under no circumstances will the Cooperative be liable or responsible for lost profits, business interruption damages or costs, or damages associated with Interconnection Member's inability to sell the electricity from the Generating Facility.

5.14 Indemnification

The Interconnection Member shall at all times indemnify, defend and save the Cooperative harmless from any and all damages, losses, claims, including claims and actions relating to injury or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney's fees, and all other obligations by or to third parties, arising out of or resulting from the Interconnection Member's (or its agents or representatives) action or inaction of its obligations hereunder.

5.15 Insurance

The Interconnection Member shall obtain and retain, for as long as the Generating Facility is interconnected with the Cooperative's System, liability insurance which protects the Interconnection Member from claims for bodily injury and/or property damage. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made. This insurance shall be primary for all purposes. The Interconnection Member shall provide certificates evidencing this coverage as required by the Cooperative. Such insurance shall be obtained from an insurance provider authorized to do business in North Carolina. The Cooperative reserves the right to refuse to establish or continue the interconnection of the Generating Facility with the Cooperative's System, if such insurance is not in effect.

5.15.1 For an Interconnection Member that is a residential Member of the Cooperative proposing to interconnect a Generating Facility no larger than 25 kW, the required coverage shall be a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence.

5.15.2 For an Interconnection Member that is a non-residential Member of the Cooperative proposing to interconnect a Generating Facility no larger than 1000 kW, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$300,000 per occurrence.

5.15.3 For an Interconnection Member that is a non-residential Member of the Cooperative proposing to interconnect a Generating Facility larger than 1000 kW, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$1,000,000 per occurrence.

5.15.4 An Interconnection Member of sufficient credit-worthiness may propose to provide this insurance via a self-insurance program if it has a self-insurance program established in accordance with commercially acceptable risk management practices.

5.16 External Disconnect Switch (EDS)

In order to comply with the Final Rule of the Rural Utilities Service regarding the Interconnection of Distributed Resources (IDR) as codified at 7 C.F.R. Part 1730, Subpart C, the Cooperative requires that the Interconnection Facilities shall include a lockable disconnect and visible open EDS that is readily accessible to and operable by authorized Cooperative personnel at all times. The EDS is a manual load break disconnect switch or safety switch with a clear visible indication of switch position between the Cooperative System and the Interconnection Member. The switch must have pad lock provisions for locking in the open position. The switch must be visible to, and accessible to, Cooperative personnel. The switch must be in close proximity to, and on the Interconnection Member's side of the point of electrical interconnection with, the Cooperative's System. The switch must be labeled "Generator Disconnect Switch." The switch may isolate the Interconnection Member and its associated load from the Cooperative 's System or disconnect only the Generator from the Cooperative 's System and shall be accessible to the Cooperative at all times. The Cooperative, in its sole discretion, determines if the switch is suitable and necessary.

Attachment 1

Glossary of Terms

25 kW Inverter Interconnection Process – The procedure for evaluating a request for Interconnection of Distributed Resources (IDR) for a certified inverter-based Generating Facility no larger than 25 kW that uses the Section 3 screens. The application process uses an all-in-one document that includes a simplified request for Interconnection for Distributed Resources, simplified procedures, and a brief set of Terms and Conditions.

Affected System – An electric system other than the Cooperative's System that may be affected by the proposed interconnection. The owner of an Affected System might be a Party to the Interconnection Agreement or other study agreements needed to interconnect the Generating Facility.

Applicable Laws and Regulations – All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

Business Day – Monday through Friday, excluding state holidays.

Commission – The North Carolina Utilities Commission. It should be noted that the Commission does not have regulatory authority over Cooperatives regarding Interconnection Agreements, Procedures and Forms. The Cooperative is governed by its Board of Directors, which approves Cooperative policies, service rules, regulations, procedures, and rates. As a borrower from the Rural Utilities Service (RUS) of the U.S. Department of Agriculture, the Cooperative is required to follow RUS rules and regulations and this Agreement meets the Final Rule of the "Interconnection of Distributed Resources" *74 Fed. Reg. 32406* (July 8, 2009) (Codified at 7 C.F.R. Part 1730, Subpart C).

Cooperative – The entity that owns, controls, or operates facilities used for providing electric service in its designated service area that the Interconnection Member is located.

Default – The failure of a breaching Party to cure its breach under the Interconnection Agreement.

Distributed Resources – Sources of electric power that are not directed connected to a bulk power transmission systems, having an installed capacity of not more than 10 MVA / 10 MW, connected to the Cooperative's electric power distribution system through a point of common coupling. Distributed resources include both generators of electricity and electric storage technologies.

Distribution System – The Cooperative's facilities and equipment used to transmit electricity to ultimate usage points such as homes and businesses from nearby generators or from interchanges with higher voltage transmission networks owned by so-called investor-owned utilities ("IOUs"), which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

Distribution Upgrades – The additions, modifications, and upgrades to the Cooperative's Distribution System at or beyond the Point of Interconnection to facilitate interconnection of the Generating Facility and render the service necessary to allow the Generating Facility to operate in parallel with the Cooperative and to inject electricity onto the Cooperative's System. Distribution Upgrades do not include Interconnection Facilities.

Fast Track Process – The procedure for evaluating an Interconnection Request for a certified Generating Facility greater than 25kW but no larger than 1000kW / 1MW that includes the Section 3 screens, member options meeting, and optional supplemental review.

Generating Facility – The Interconnection Member's Distributed Resource device for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Member's Interconnection Facilities. Also see Distributed Resources.

Governmental Authority – Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include the Interconnection Member, the Cooperative, or any affiliate thereof.

Interconnection Member – Any entity, including the Cooperative, which proposes to interconnect its Generating Facility with the Cooperative's System.

Interconnection Facilities – The Cooperative's Interconnection Facilities and the Interconnection Member's Interconnection Facilities. Collectively, Interconnection Facilities include all facilities and equipment between the Distributed Resource Generating Facility and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generating Facility to the Cooperative's System. Interconnection Facilities are sole use facilities and shall not include Upgrades.

Interconnection Request – The Interconnection Member's request, in accordance with the interconnection procedures, to interconnect a new Distributed Resource Generating Facility, or to increase the capacity of, or make a Material Modification to, an existing Generating Facility that is interconnected with the Cooperative's System.

Material Modification – A modification to machine data or equipment configuration or to the interconnection site of the Generating Facility that has a material impact on the cost, timing or design of any Interconnection Facilities or Upgrades.

Network Upgrades – Additions, modifications, and upgrades to the Cooperative's Transmission System required to accommodate the interconnection of the Generating Facility to the Cooperative's System. Network Upgrades do not include Distribution Upgrades. Upgrades of this sort may be required for Generating Systems greater than 1000kW / 1MW but less than 10 MVA / 10 MW.

Operating Requirements – Any operating and technical requirements that may be applicable due to Regional Reliability Organization, Independent System Operator, control area, or the Cooperative's requirements, including those set forth in the Interconnection Agreement.

Party or Parties – The Cooperative, Interconnection Member, and possibly the owner of an Affected System, or any combination of the above.

Point of Interconnection – The point where the Interconnection Facilities connect with the Cooperative's System.

Prudent Utility Practice (PUP) – Any of the practices, methods and acts engaged in or approved by a significant portion of the electric 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. PUP 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 and the utility industry.

Queue Position – 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 Cooperative and a demonstration of site control, if requested.

Reasonable Efforts – With respect to an action required to be attempted or taken by a Party under the Interconnection Agreement, efforts that are timely and consistent with Prudent Utility Practices and are otherwise substantially equivalent to those a Party would use to protect its own interests.

Renewable Energy Certificates (RECs) – Also known as Renewable Energy Credits or Green Tags, are tradable, non-tangible energy commodities that represent proof that 1 megawatt-hour (MWH) of electricity was generated from an eligible renewable energy resource. In North Carolina, the Commission has established a Renewable Energy Tracking System (NC RETS) to register and certify RECs produced from renewable energy projects providing one REC for every 1,000 kWh of electricity it produces and delivers to electric systems. These RECs are sold and traded separate from commodity electricity and the consumer/owner of the REC receives only a certificate. NC Green Power is an independent, non-profit organization that purchases RECs from small producers in the state.

Standard – The interconnection procedures, forms and agreements approved by the Cooperative for interconnection of Generating Facilities to the Cooperative's System in its service area.

Study Process – The procedure for evaluating an Interconnection Request that includes the Section 4 scoping meeting, feasibility study, system impact study, and facilities study.

System – The facilities owned, controlled or operated by the Cooperative that are used to provide electric service in its service area.

Transmission System – The transmission facilities owned, controlled or operated by the investor-owned utility to which Cooperative's System is interconnected

Upgrades – The required additions and modifications to the Cooperative's System at or beyond the Point of Interconnection. Upgrades may be Network Upgrades or Distribution Upgrades. Upgrades do not include Interconnection Facilities.

Attachment 2

INTERCONNECTION REQUEST

Piedmont Electric Membership Corporation
Designated Contact Person(s): Larry Hopkins
Address: PO Drawer 1179 Hillsborough, NC 27278
Telephone Number: 919-644-3431
E-Mail Address: larry.hopkins@pemc.coop

An Interconnection Request is considered complete when it provides all applicable and correct information required below.

Preamble and Instructions

A Piedmont Electric Membership Corporation Member who requests interconnection with PEMC must submit this Interconnection Request by hand delivery, mail, or e-mail Larry Hopkins.

Request for: Fast Track Process Study Process

(All Generating Facilities larger than 1000 kW / 1 MW must use the Study Process.)

Processing Fee or Deposit

Fast Track Process – Non-Refundable Processing Fees

- If the Generating Facility is 25 kW or smaller, the fee is \$0.
- If the Generating Facility is larger than 25 kW but not larger than 1000 kW / 1MW, the fee is \$150.

Study Process Deposit

If the Interconnection Request is submitted under the Study Process, whether a new submission or an Interconnection Request that did not pass the Fast Track Process, the Interconnection Member shall submit to the Cooperative a deposit not to exceed \$1,000 towards study costs. The minimum fee to participate in the Study Process is \$500.

Change in Ownership – Non-Refundable Processing Fee

If the Interconnection Request is submitted solely due to a transfer of ownership of the Generating Facility, the fee is \$50.

Interconnection Member Information

Legal Name of the Interconnection Member (or, if an individual, individual's name)

Name: _____

Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Facility Location (if different from above): _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

Alternative Contact Information (if different from the Interconnection Member)

Contact Name: _____

Title: _____

Address: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

- Application is for:
- New Generating Facility
 - Capacity Addition to Existing Generating Facility
 - Transfer of Ownership of Existing Generating Facility

RATE SCHEDULE REQUESTED

Small Renewable Generation Net Metering Rider (Rider SRG-NM)	_____
Medium Renewable Generation Net Metering Rider (Rider MRG-NM)	_____
Small Qualifying Facilities Purchased Power (Schedule SQF)	_____
Qualifying Facilities Purchased Power (Schedule QF)	_____

Will the Generating Facility be used for any of the following?

- To Supply Power to the Interconnection Member? Yes No
To Supply Power to the Cooperative? Yes No
To Supply Power to Others? Yes No

For installations at locations with existing electric service to which the proposed Generating Facility will interconnect, provide: _____

(Existing Account Number and Address)

Contact Name: _____

Title: _____

Address: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-Mail Address: _____

Requested Point of Interconnection: _____

Interconnection Member's Requested In-Service Date: _____

Generating Facility Information

Data apply only to the Generating Facility, not the Interconnection Facilities.

Energy Source: Solar Wind Hydro Hydro(Type e.g. Run-of-River) _____
 Diesel Natural Gas Fuel Oil Other (state type) _____

Prime Mover: Fuel Cell Reciprocating Engine Gas Turbine Steam Turbine
 Micro turbine PV Other

Type of Generator: Synchronous Induction Inverter

Generator Nameplate Rating: _____ kW (Typical) Generator Nameplate: _____ kVAR

Interconnection Member or Member-Site Load: _____ kW (if none, so state)

Typical Reactive Load (if known): _____

Maximum Physical Export Capability Requested: _____ kW

Will the Generating Facility also have installed storage? Yes____No____

List components of the Generating Facility equipment package that are currently certified:

Equipment Type	Certifying Entity
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Is the prime mover compatible with the certified protective relay package? Yes No

Generator (or solar collector)

Manufacturer, Model Name, & Number: _____

Version Number: _____

Nameplate Output Power Rating in kW: (Summer) _____ (Winter) _____

Nameplate Output Power Rating in kVA: (Summer) _____ (Winter) _____

Individual Generator Power Factor

Rated Power Factor: Leading: _____ Lagging: _____

Total Number of Generators in wind farm to be interconnected pursuant to this Interconnection Request: _____ Elevation: _____

Single phase _____ Three phase _____

Inverter Manufacturer, Model Name, & Number (if used): _____

List of adjustable set points for the protective equipment or software: _____

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Request.

Generating Facility Characteristic Data (for inverter-based machines)

Max design fault contribution current: _____ Instantaneous _____ or RMS? _____

Harmonics Characteristics: _____

Start-up requirements: _____

Generating Facility Characteristic Data (for rotating machines)

RPM Frequency: _____

(*) Neutral Grounding Resistor (if applicable): _____

Synchronous Generators:

Direct Axis Synchronous Reactance, X_d : _____ P.U.

Direct Axis Transient Reactance, X'_d : _____ P.U.

Direct Axis Subtransient Reactance, X''_d : _____ P.U.

Negative Sequence Reactance, X_2 : _____ P.U.

Zero Sequence Reactance, X_0 : _____ P.U.

KVA Base: _____

Field Volts: _____

Field Amperes: _____

Induction Generators:

Motoring Power (kW): _____

$I^2 t$ or K (Heating Time Constant): _____

Rotor Resistance, R_r : _____

Stator Resistance, R_s : _____

Stator Reactance, X_s : _____

Rotor Reactance, X_r : _____

Magnetizing Reactance, X_m : _____

Short Circuit Reactance, X_d'' : _____

Exciting Current: _____

Temperature Rise: _____

Frame Size: _____

Design Letter: _____

Reactive Power Required In Vars (No Load): _____

Reactive Power Required In Vars (Full Load): _____

Total Rotating Inertia, H: _____ Per Unit on kVA Base

Note: Please contact the Cooperative prior to submitting the Interconnection Request to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

Interconnection Facilities Information

Will a transformer be used between the generator and the point of common coupling? Yes No

Will the transformer be provided by the Interconnection Member? Yes No

Transformer Data (if applicable, for Interconnection Member-owned transformer):

Is the transformer: Single phase Three phase Size: _____ kVA

Transformer Impedance: _____ % on _____ kVA Base

If Three Phase:

Transformer Primary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Secondary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Tertiary: _____ Volts _____ Delta _____ Wye _____ Wye Grounded

Transformer Fuse Data (if applicable, for Interconnection Member-owned fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total Clearing Time-Current Curves)

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Interconnecting Circuit Breaker (if applicable):

Manufacturer: _____ Type: _____

Load Rating (Amps): _____ Interrupting Rating (Amps): _____ Trip Speed (Cycles): _____

Interconnection Protective Relays (if applicable):

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

	Setpoint Function	Minimum	Maximum
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

If Discrete Components:

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Current Transformer Data (if applicable):

(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Potential Transformer Data (if applicable):

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

Manufacturer: _____

Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____

General Information

Enclose copy of site electrical one-line diagram showing the configuration of all Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.

Is One-Line Diagram Enclosed? Yes No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Generating Facility (e.g., USGS topographic map or other diagram or documentation).

Proposed location of protective interface equipment on property (include address if different from the Interconnection Member's address):

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes. Is Available Documentation Enclosed? Yes No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).

Are Schematic Drawings Enclosed? Yes No

Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Interconnection Request is true and correct.

For Interconnection Member: _____ Date: _____

Attachment 3

Certification Codes and Standards

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

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

IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms

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

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

IEEE Std C37.90.1-1989 (R1994), 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 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) AC Power Circuits

NEMA MG 1-1998, Motors and Small Resources, Revision 3

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

NFPA 70 (2002), National Electrical Code

UL 1741, Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources

These references include and incorporate by reference any updates or additions to the listed standards and these standards (or “families” of standards) shall apply to any future applications.

Attachment 4

Certification of Generator Equipment Packages

- 1.0 Generating Facility equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation if (1) it has been tested in accordance with industry standards for continuous utility interactive operation in compliance with the appropriate codes and standards referenced below 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 3 of the Interconnection Procedures, (2) it has been labeled and is publicly listed by such NRTL at the time of the Interconnection Request, 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 website and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.
- 2.0 The Interconnection Member 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.
- 3.0 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 commissioning test by the Parties to the interconnection nor follow-up production testing by the NRTL.
- 4.0 If the certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Member 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.
- 5.0 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 Interconnection Member's side of the point of common coupling shall be required to meet the requirements of the Interconnection Procedures.
- 6.0 An equipment package does not include equipment provided by the Cooperative.

Attachment 5 – Various Interconnection Request Forms

Interconnection Request For Interconnecting a Certified Inverter-Based Generating Facility No Larger than 25 kW

This Interconnection Request is considered complete when it provides all applicable and correct information required below. Additional information to evaluate the Interconnection Request may be required.

Processing Fee

None

If the Interconnection Request is submitted solely due to a transfer of ownership of the Generating Facility, the fee is \$50.

Interconnection Member

Name: _____

Address: _____

Existing Meter Serial Number (If Applicable) _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Night): _____

Telephone (Cell): _____ Fax: _____

E-Mail Address: _____

Contact (if different from Interconnection Member)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Night): _____

Telephone (Cell): _____ Fax: _____

E-Mail Address: _____

Owner(s) of the Generating Facility: _____

Generating Facility Information

Location (if different from above): _____

Inverter Manufacturer: _____ Model _____

Is the equipment UL 1741 Listed? Yes No

If Yes, attach manufacturer's cut-sheet/specifications showing UL 1741 listing for model.

Nameplate Rating: (AC Rating) _____ (kW) _____ (kVA) _____ (AC Volts)

Single Phase _____ Three Phase _____

System Design Capacity: (DC Rating) _____ (kW) _____ (kVA)

Type of Generation

Solar Wind Hydro Diesel Natural Gas Fuel Oil

Other (describe) _____

Is the equipment identified and listed as "Utility Interactive" when operated in conjunction with a voltage inverter that is UL 1741 Listed? Yes No

Estimated Installation Date: _____ Estimated In-Service Date: _____

The 25 kW Inverter Process is available only for inverter-based Generating Facilities no larger than 25 kW that meet the codes, standards, and certification requirements of Attachments 3 and 4 of the North Carolina Interconnection Procedures, or the Cooperative has reviewed the design or tested the proposed Generating Facility and is satisfied that it is safe to operate.

Proposed Method of Operation

Buy All/Sell All Operation _____ Net Metering Operation _____

Additional Data

Interconnection Member Signature

I certify that the equipment listed above complies with the Cooperative's interconnection requirements, along with any and all IEEE, UL, NESC, and NEC standards related to interconnecting to public utilities. I acknowledge that in order to ensure protection of the Cooperative's system, the Cooperative reserves the right, at its discretion, to inspect the consumer's renewable generation at any time, upon reasonable notice to the consumer, in an effort to ensure compliance with the Interconnection Standards. The Cooperative reserves the right to disconnect electric service to any premise, with or without notice, if the Cooperative determines that the renewable generation is not in compliance with the Interconnection Standard and is being operated in parallel with the Cooperative's system. I also acknowledge that the consumer shall be responsible for providing suitable control and protective devices on its equipment to assure no disturbance to other consumers of the Cooperative, or to the Cooperative itself, and to protect the consumer's facilities and the Cooperative's facilities from all loss or damage that could result from operation in parallel with the Cooperative's system. The Cooperative reserves the right to require additional interconnection facilities, furnished, installed, owned and maintained by the Cooperative, at the consumer's expense, if the consumer's renewable generation, despite compliance with the Interconnection Standard, causes safety, reliability or power quality problems. The consumer shall obtain and retain, for as long as the consumer's renewable generation is interconnected with the Cooperative's system, comprehensive general liability insurance with limits of at least \$100,000 per occurrence which protects the consumer from claims for bodily injury and/or property damage. This insurance shall be primary for all purposes. The consumer shall provide certificates evidencing this coverage as required by the Cooperative with a thirty day written notice to the Cooperative before cancellation. The Cooperative reserves the right to refuse to establish, or continue the interconnection of the consumer's renewable generation with the Cooperative's system, if such insurance is not in effect. I also acknowledge that the consumer is required to maintain the system, at the consumer's expense, so that the system operates as specified by the manufacturer, the IEEE, UL, and any other applicable codes and standards. I agree to abide by the Terms and Conditions for Interconnecting a Certified Inverter-Based Generating Facility No Larger than 25 kW and return the Certificate of Completion when the Generating Facility has been installed.

I understand that Piedmont is relying on the veracity of the information and certifications provided herein and do hereby certify that I have read the foregoing statements and verify that all of the information so provided is true to best of my knowledge. In compliance with North Carolina HB-589, I hereby certify that I own this equipment and that it is not leased.

Signed: _____

Title: _____ Date: _____

.....

Contingent Approval to Interconnect the Generating Facility (For Cooperative use only)

Interconnection of the Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting a Certified Inverter-Based Generating Facility No Larger than 25 kW and return of the Certificate of Completion.

Cooperative Representative Signature: _____

Title: _____ Date: _____

Interconnection Request ID number: _____

Cooperative waives inspection/witness test? Yes No

**Certificate of Completion For Interconnecting a Certified Inverter-Based
Generating Facility No Larger than 25 kW**

Is the Generating Facility owner-installed? Yes No

Interconnection Member

Name: _____

Contact Person: _____

Address: _____

Location of the Generating Facility (if different from above) _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Telephone (Cell): _____ Fax: _____

E-Mail Address: _____

Electrician

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Telephone (Cell) _____ Fax: _____

E-Mail Address: _____

License Number: _____

Date Approval to Install Generating Facility granted by the Cooperative: _____

Interconnection Request ID Number: _____

As a condition of interconnection, the System will be approved and pass an inspection by the County or City and you are required to send a copy of this form to the Cooperative. (Information Below):

Name: Larry Hopkins
Company: Piedmont EMC
Address: PO Drawer 1179, Hillsborough, NC 27278
E-mail: or larry.hopkins@pemc.coop

.....
Approval to Energize the Generating Facility (For Cooperative use only)

Energizing the Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting a Certified Inverter-Based Generating Facility No Larger than 25 kW.

Cooperative Representative Signature: _____

Title: _____ Date: _____

Terms and Conditions For Interconnecting a Certified Inverter-Based Generating Facility No Larger than 25 kW

1.0 Construction of the Facility

The Interconnection Member (Member) may proceed to construct (including operational testing not to exceed two hours) the Generating Facility when the Cooperative approves the Interconnection Request and returns it to the Member.

2.0 Interconnection and Operation

The Member may interconnect the Generating Facility with the Cooperative's System and operate in parallel with the Cooperative's System once all of the following have occurred:

- 2.1 Upon completing construction, the Member will cause the Generating Facility to be inspected or otherwise certified by the appropriate local electrical inspector with jurisdiction, and
- 2.2 The Member returns the Certificate of Completion to the Cooperative, and
- 2.3 The Cooperative has either:
 - 2.3.1 Completed its inspection of the Generating Facility to ensure that all equipment has been appropriately installed and that all electrical connections have been made in accordance with applicable codes. All inspections must be conducted by the Cooperative, at its own expense, at a mutually acceptable date and time after receipt of the Certificate of Completion. The Cooperative will provide a written statement that the Generating Facility has passed inspection or notify the Member of what steps it must take to pass inspection as soon as practicable after the inspection takes place; or
 - 2.3.2 Waived, in writing, the right to inspect the Generating Facility.
- 2.4 The Cooperative has the right to disconnect the Generating Facility in the event of improper installation or failure to return the Certificate of Completion.
- 2.5 Revenue quality metering equipment must be installed and tested in accordance with applicable American National Standards Institute (ANSI) standards and all applicable regulatory requirements.

3.0 Safe Operations and Maintenance

The Member shall be fully responsible to operate, maintain, and repair the Generating Facility as required to ensure that it complies at all times with the interconnection standards to which it has been certified.

4.0 Access

The Cooperative shall have access to the External Disconnect Switch and metering equipment of the Generating Facility at all times.

5.0 Disconnection

The Cooperative may temporarily disconnect the Generating 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 Generating Facility does not operate in a manner consistent with these Terms and Conditions.

6.0 Indemnification

The Member shall at all times indemnify, defend, and save the Cooperative 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 Member's (or that of its agents or representatives) action or inactions of its obligations hereunder.

7.0 Insurance

All insurance policies must be maintained with insurers authorized to do business in North Carolina. The Parties agree to the following insurance requirements:

- 7.1 If the Member is a residential Member of the Cooperative, the required coverage shall be a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence.
- 7.2 If the Member is a non-residential Member of the Cooperative, the required coverage shall be comprehensive general liability insurance with coverage in the amount of at least \$300,000 per occurrence.
- 7.3 The Member may provide this insurance via a self-insurance program if it has a self-insurance program established in accordance with commercially acceptable risk management practices.

8.0 Limitation of Liability

The Cooperative's liability to the Member for any loss, cost, claim, injury, or expense, including reasonable attorney's fees, relating to or arising from any act or omission hereunder, shall be limited to the amount of direct damage actually incurred. In no event shall the Cooperative be liable to the Member for any indirect, special, incidental, consequential, or punitive damages of any kind. Under no circumstances will the Cooperative be liable or responsible for lost profits, business interruption damages or costs, or damages associated with Member's inability to sell the electricity from the Generating Facility.

9.0 Termination

The agreement to interconnect and operate in parallel may be terminated under the following conditions:

9.1 By the Member

By providing written notice to the Cooperative and physically and permanently disconnecting the Generating Facility.

9.2 By the Cooperative

If the Generating Facility fails to operate for any consecutive 12-month period or the Member fails to remedy a violation of these Terms and Conditions.

9.3 Permanent Disconnection

In the event this Agreement is terminated, the Cooperative shall have the right to disconnect its facilities or direct the Member to disconnect its Generating Facility.

9.4 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.

10.0 Assignment/Transfer of Ownership of the Facility

10.1 This Agreement shall not survive the transfer of ownership of the Generating Facility to a new owner.

10.2 The new owner must complete and submit a new Interconnection Request agreeing to abide by these Terms and Conditions for interconnection and parallel operations within 20 Business Days of the transfer of ownership.

10.3 The Cooperative will ordinarily not study or inspect the Generating Facility unless the new owner's Interconnection Request indicates that a Material Modification has occurred or is proposed.

Attachment 6

Feasibility Study Agreement

THIS AGREEMENT ("Agreement") is made and entered into this ____ day of _____ 20__ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Interconnection Member,") and Piedmont Electric Membership Corporation, a Cooperative existing under the laws of the State of North Carolina, ("Cooperative"). The Interconnection Member and the Cooperative each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Member is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request completed by the Interconnection Member on _____; and

WHEREAS, the Interconnection Member desires to interconnect the Generating Facility with the Cooperative's System; and

WHEREAS, the Interconnection Member has requested the Cooperative to perform a feasibility study to assess the feasibility of interconnecting the proposed Generating Facility with the Cooperative's System, and of any Affected Systems;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Glossary of Terms (Attachment 1).
- 2.0 The Interconnection Member elects and the Cooperative will cause to be performed an interconnection feasibility study consistent with the Interconnection Procedures and the RUS Final Rule of 7 C.F.R. Part 1730, Subpart C
- 3.0 The scope of the feasibility study shall be subject to the assumptions set forth in Appendix A to this Agreement.
- 4.0 The feasibility study shall be based on the technical information provided by the Interconnection Member in the Interconnection Request, as may be modified as the result of the scoping meeting. The Cooperative reserves the right to request additional technical information from the Interconnection Member as may reasonably become necessary consistent with Prudent Utility Practice during the course of the feasibility study. If the Interconnection Member modifies its Interconnection Request, the time to complete the feasibility study may be extended.
- 5.0 In performing the study, the Cooperative shall rely, to the extent reasonably practicable, on existing studies of recent vintage. The Interconnection Member shall not be charged for such existing studies; however, the Interconnection Member shall be responsible for charges associated with any new study or modifications to existing studies that are reasonably necessary to perform the feasibility study.

- 6.0 The feasibility study report shall provide the following analyses for the purpose of identifying any potential adverse system impacts that would result from the interconnection of the Generating Facility as proposed:
- 6.1 Initial identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection;
 - 6.2 Initial identification of any thermal overload or voltage limit violations resulting from the interconnection;
 - 6.3 Initial review of grounding requirements and electric system protection; and
 - 6.4 Description and non-binding estimated cost of facilities required to interconnect the proposed Generating Facility and to address the identified short circuit and power flow issues.
- 7.0 The feasibility study shall model the impact of the Generating Facility regardless of purpose in order to avoid the further expense and interruption of operation for reexamination of feasibility and impacts if the Interconnection Member later changes the purpose for which the Generating Facility is being installed.
- 8.0 The study shall include the feasibility of any interconnection at a proposed project site where there could be multiple potential Points of Interconnection, as requested by the Interconnection Member and at the Interconnection Member's cost.
- 9.0 A deposit of the lesser of 50 percent of good faith estimated feasibility study costs or earnest money of \$1,000 may be required from the Interconnection Member.
- 10.0 Once the feasibility study is completed, a feasibility study report shall be prepared and transmitted to the Interconnection Member. Barring unusual circumstances, the feasibility study will typically be completed and the feasibility study report transmitted within 30 Business Days of the Interconnection Member's agreement to conduct a feasibility study.
- 11.0 Any study fees will be based on the Cooperative's actual costs and will be invoiced to the Interconnection Member after the study is completed and delivered.
- 12.0 The Interconnection Member must pay any study costs that exceed the deposit without interest within 30 calendar days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the Cooperative shall refund such excess within 30 calendar days of the invoice without interest.
- 13.0 Governing Law, Regulatory Authority, and Rules
- The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations.
- 14.0 Amendment
- The Parties may amend this Agreement by a written instrument duly executed by both Parties.
- 15.0 No Third-Party Beneficiaries
- This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

16.0 Waiver

16.1 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

16.2 Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Member shall not constitute a waiver of the Interconnection Member's legal rights to obtain an interconnection from the Cooperative. Any waiver of this Agreement shall, if requested, be provided in writing.

17.0 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

18.0 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

19.0 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

20.0 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

20.1 The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Cooperative be liable for the actions or inactions of the Interconnection Member or its subcontractors with respect to obligations of the Interconnection Member under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

20.2 The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

21.0 Reservation of Rights

Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

Piedmont Electric Membership Corporation

Signed _____

Signed _____

Name (Printed):

Name (Printed):

Title _____

Title _____

Date _____

Date _____

Assumptions Used in Conducting the Feasibility Study

The feasibility study will be based upon the information set forth in the Interconnection Request and agreed upon in the scoping meeting held on _____:

1) Designation of Point of Interconnection and configuration to be studied.

2) Designation of alternative Points of Interconnection and configuration.

1) and 2) are to be completed by the Interconnection Member. Other assumptions (listed below) are to be provided by the Interconnection Member and the Cooperative.

Attachment 7

System Impact Study Agreement

THIS AGREEMENT ("Agreement") is made and entered into this ____ day of _____ 20__ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Interconnection Member,") and Piedmont Electric Membership Corporation, a Cooperative existing under the laws of the State of North Carolina, ("Cooperative"). The Interconnection Member and the Cooperative each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Member is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request completed by the Interconnection Member on _____; and

WHEREAS, the Interconnection Member desires to interconnect the Generating Facility with the Cooperative's System; and

WHEREAS, the Cooperative has completed a feasibility study and provided the results of said study to the Interconnection Member (this recital to be omitted if the Parties have agreed to forego the feasibility study); and

WHEREAS, the Interconnection Member has requested the Cooperative to perform a system impact study to assess the impact of interconnecting the Generating Facility with the Cooperative's System, and of any Affected Systems;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Glossary of Terms (Attachment 1).
- 2.0 The Interconnection Member elects and the Cooperative shall cause to be performed a system impact study consistent with the Interconnection Procedures.
- 3.0 The scope of the system impact study shall be subject to the assumptions set forth in Appendix A to this Agreement.
- 4.0 A system impact study will be based upon the results of the feasibility study and the technical information provided by Interconnection Member in the Interconnection Request. The Cooperative reserves the right to request additional technical information from the Interconnection Member as may reasonably become necessary consistent with Prudent Utility Practices during the course of the system impact study. If the Interconnection Member modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the system impact study may be extended.
- 5.0 A system impact study shall consist of 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, as necessary. A system impact study shall state the assumptions upon which it is based, state the results of the analyses, and provide the requirement or potential impediments to providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems

identified in those analyses and implement the interconnection. A system impact study shall provide a list of facilities that are required as a result of the Interconnection Request and non-binding good faith estimates of cost, responsibility and time to construct.

- 6.0 A distribution system impact study shall incorporate a distribution load flow study, an analysis of equipment interrupting ratings, protection coordination study, voltage drop and flicker studies, protection and set point coordination studies, grounding reviews, and the impact on electric system operation, as necessary.
- 7.0 Affected Systems may participate in the preparation of a system impact study, with a division of costs among such entities as they may agree. All Affected Systems shall be afforded an opportunity to review and comment upon a system impact study that covers potential adverse system impacts on their electric systems.
- 8.0 If the Cooperative uses a queuing procedure for sorting or prioritizing projects and their associated cost responsibilities for any required Network Upgrades, the system impact study shall consider all generating facilities (and with respect to paragraph 8.3 below, any identified Upgrades associated with such higher queued interconnection) that, on the date the system impact study is commenced:
 - 8.1. Are directly interconnected with the Cooperative's electric system; or
 - 8.2. Are interconnected with Affected Systems and may have an impact on the proposed interconnection; and
 - 8.3. Have a pending higher queued Interconnection Request to interconnect with the Cooperative's electric system.
- 9.0 A distribution system impact study, if required, shall be completed and the results transmitted to the Interconnection Member within a reasonable period after this Agreement is signed by the Parties. A transmission system impact study, if required, shall be completed and the results transmitted to the Interconnection Member, also within a reasonable period after this Agreement is signed by the Parties, unless the study involves Affected Systems per 7.0.
- 10.0 A deposit of the equivalent of the good faith estimated cost of a distribution system impact study and one-half of the good faith estimated cost of a transmission system impact study may be required from the Interconnection Member.
- 11.0 Any study fees shall be based on the Cooperative's actual costs and will be invoiced to the Interconnection Member after the study is completed and delivered.
- 12.0 The Interconnection Member must pay any study costs that exceed the deposit without interest within 30 calendar days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the Cooperative shall refund such excess within 30 calendar days of the invoice without interest.
- 13.0 Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations.
- 14.0 Amendment

The Parties may amend this Agreement by a written instrument duly executed by both Parties.

15.0 No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.

16.0 Waiver

- 16.1. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
- 16.2. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Member shall not constitute a waiver of the Interconnection Member's legal rights to obtain an interconnection from the Cooperative. Any waiver of this Agreement shall, if requested, be provided in writing.

17.0 Multiple Counterparts

This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

18.0 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

19.0 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

20.0 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

- 20.1. The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Utility be liable for the actions or inactions of the Interconnection Member or its subcontractors with respect to obligations of the Interconnection Member under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally

binding upon, and shall be construed as having application to, any subcontractor of such Party

20.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

21.0 Reservation of Rights

Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

Piedmont Electric Membership Corporation

Signed

Signed

Name (Printed):

Name (Printed):

Title

Title

Attachment 8

Facilities Study Agreement

THIS AGREEMENT ("Agreement") is made and entered into this ____ day of _____ 20__ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Interconnection Member,") and Piedmont Electric Membership Corporation, a Cooperative existing under the laws of the State of North Carolina, ("Cooperative"). The Interconnection Member and the Cooperative each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Member is proposing to develop a Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request completed by the Interconnection Member on _____; and

WHEREAS, the Interconnection Member desires to interconnect the Generating Facility with the Cooperative's System; and

WHEREAS, the Cooperative has completed a system impact study and provided the results of said study to the Interconnection Member (this recital to be omitted if the Parties have agreed to forego the feasibility study); and

WHEREAS, the Interconnection Member has requested the Cooperative to perform a facilities study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the system impact study and/or relevant studies in accordance with Prudent Utility Practices to physically and electrically connect the Generating Facility with the Cooperative's System;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated or the meanings specified in the Glossary of Terms (Attachment 1).
- 2.0 The Interconnection Member elects and the Cooperative shall cause to be performed a facilities study consistent with the Interconnection Procedures.
- 3.0 The scope of the system impact study shall be subject to the assumptions set forth in Appendix A to this Agreement.
- 4.0 The 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 system impact studies. The 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 the Cooperative'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.
- 5.0 The Cooperative may propose to group facilities required for more than one Interconnection Member in order to minimize facilities costs through economies of scale, but any Interconnection Member may require the installation of facilities required for its own Generating Facility if it is willing to pay the costs of those facilities.

- 6.0 A deposit of the good faith estimated facilities study costs may be required from the Interconnection Member.
- 7.0 In cases where Upgrades are required, the facilities study will be completed within a reasonable period of the receipt of this Agreement, but will typically require additional time beyond that required if no Upgrades were necessary.
- 8.0 Once the facilities study is completed, a facilities study report will be prepared and transmitted to the Interconnection Member.
- 9.0 Any study fees shall be based on the Cooperative's actual costs and will be invoiced to the Interconnection Member after the study is completed and delivered.
- 10.0 The Interconnection Member must pay any study costs that exceed the deposit without interest within 30 calendar days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the Cooperative shall refund such excess within 30 calendar days of the invoice without interest.
- 11.0 Governing Law, Regulatory Authority, and Rules
The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of North Carolina, without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations.
- 12.0 Amendment
The Parties may amend this Agreement by a written instrument duly executed by both Parties.
- 13.0 No Third-Party Beneficiaries
This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and where permitted, their assigns.
- 14.0 Waiver
14.1. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.
14.2. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Agreement. Termination or default of this Agreement for any reason by Interconnection Member shall not constitute a waiver of the Interconnection Member's legal rights to obtain an interconnection from the Cooperative. Any waiver of this Agreement shall, if requested, be provided in writing.
- 15.0 Multiple Counterparts
This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
- 16.0 No Partnership
This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

17.0 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

18.0 Subcontractors

Nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor as it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

18.1. The creation of any subcontract relationship shall not relieve the hiring Party of any of its obligations under this Agreement. The hiring Party shall be fully responsible to the other Party for the acts or omissions of any subcontractor the hiring Party hires as if no subcontract had been made; provided, however, that in no event shall the Cooperative be liable for the actions or inactions of the Interconnection Member or its subcontractors with respect to obligations of the Interconnection Member under this Agreement. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

20.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

21.0 Reservation of Rights

Nothing in this Agreement shall limit the rights of the Parties except to the extent that the Parties otherwise agree as provided herein.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

Piedmont Electric Membership Corporation

Signed _____

Signed _____

Name (Printed): _____

Name (Printed): _____

Title _____

Title _____

Data to Be Provided by the Interconnection Customer with the Facilities Study Agreement

Provide location plan and simplified one-line diagram of the plant and station facilities. For staged projects, please indicate future generation, circuits, etc.

On the one-line diagram, indicate the generation capacity attached at each metering location. (Maximum load on CT/PT)

On the one-line diagram, indicate the location of auxiliary power. (Minimum load on CT/PT) Amps

One set of metering is required for each generation connection to the new ring bus or existing Utility station. Number of generation connections: _____

Will an alternate source of auxiliary power be available during CT/PT maintenance? Yes No

Will a transfer bus on the generation side of the metering require that each meter set be designed for the total plant generation? Yes No

(Please indicate on the one-line diagram).

What type of control system or PLC will be located at the Generating Facility?

What protocol does the control system or PLC use?

Please provide a 7.5-minute quadrangle map of the site. Indicate the plant, station, distribution line, and property lines.

Physical dimensions of the proposed interconnection station:

Bus length from generation to interconnection station:

Line length from interconnection station to Cooperative's System.

Tower number observed in the field (Tagged on tower base)*:

Number of third party easements required for lines*:

* To be completed in coordination with Cooperative.

Is the Generating Facility located in Cooperative's service area?

Yes No If No, please provide name of local provider:

Please provide the following proposed schedule dates:

Begin Construction Date: _____

Generator step-up transformers
receive back feed power Date: _____

Generation Testing Date: _____

Commercial Operation Date: _____

**PIEDMONTELECTRIC MEMBERSHIP COOPERATIVE AGREEMENT
FOR INTERCONNECTION OF DISTRIBUTED GENERATION**

SHORT FORM CONTRACT

This Interconnection Agreement (“Agreement”) is made and entered into this ____ day of _____, 20____, by Piedmont EMC, (Cooperative), a corporation organized under the laws of North Carolina, and _____ (“DG Owner/Operator”), each hereinafter sometimes referred to individually as “Party” or both referred to collectively as the “Parties”. In consideration of the mutual covenants set forth herein, the Parties agree as follows:

This agreement provides for the safe and orderly operation of the electrical facilities interconnecting the DG Owner/Operator’s facility at the following address,

_____ and the electrical distribution facility owned by the Cooperative.

This Agreement does not supersede any requirements of any by-laws, applicable tariffs, rates, rules and regulations in place between the DG Owner/Operator and the Cooperative.

1. **Intent of Parties:** It is the intent of DG Owner/Operator to interconnect an electric power generator to the Cooperative’s electrical distribution system.

It is the intent of Piedmont EMC to operate the distribution system to maintain a high level of service to their customers and to maintain a high level of power quality.

It is the intent of both parties to operate the facilities in a way that ensures the safety of the public and their employees.

2. **Operating authority:** The DG Owner/Operator is responsible for establishing operating procedures and standards within their organization. The operating authority for the DG Owner/Operator shall ensure that the Operator in Charge of the generator is competent in the operation of the electrical generation system and is aware of the provisions of any operating agreements and regulations relating to the safe operation of electrical power systems.

3. **Operator in Charge:** The operator in charge is the person identified by name or job title responsible for the real time operation of all electrical facilities related to the interconnection and owned by their organization.

4. **Suspension of Interconnection:** It is intended that the interconnection should not compromise Piedmont EMC's protection or operational requirements. The operation of the DG Owner/Operator's System and the quality of electric energy supplied by the DG Owner/Operator shall meet the standards as specified by the Cooperative. If the operation of the DG Owner/Operator's system or quality of electric energy supplied (in the case of power export) does not meet the standards as specified, then Piedmont EMC will notify the DG Owner/Operator to take reasonable and appropriate corrective action. Piedmont EMC shall have the right to disconnect the DG Owner/Operator's System, until compliance is reasonably demonstrated. Notwithstanding, Piedmont EMC may in its sole discretion disconnect the DG Owner/Operator's generating plant from the Distribution Facility without notice if the operating of the Generating Plant imposes a threat, in the cooperative's sole judgement, to life and property.

5. **Maintenance Outages:** Maintenance outages will occasionally be required on the Piedmont EMC's system, and the Cooperative will provide as much notice and planning as practical to minimize downtime.

6.

7. **Access:** Access is required at all times by Piedmont EMC to the DG Owner/Operator's site for maintenance, operating and meter reading. Piedmont EMC reserves the right, but not the obligation, to inspect the DG Owner/Operator's facilities.

8. **Liability and Indemnification:** DG Owner/Operator shall assume all liability for and shall indemnify the Cooperative for any claims, losses, costs, and expenses of any kind or character to the extent that they result from DG Owner/Operator's negligence or other wrongful conduct in connection with the design, construction or operation of DG Owner/Operator's facility.

9. **Term:** This Agreement becomes effective when executed by both Parties and shall continue in effect until terminated. It may be canceled by DG Owner with not less than 30 days notice to the other party. Piedmont EMC may cancel it if DG Owner is in breach of it or is inactive for 6 months.

AGREED TO BY

DG Owner/Operator

Cooperative

Signature: _____

Signature: _____

Name: _____

Name: Larry Hopkins

Title: _____

Title: Manager of Engineering

Date: _____

Date: _____

Operating Authority (if different from DG Owner/Operator)

Name: _____

Address: _____

City and State: _____

Contact Number: _____

Operator in Charge (if different from DG Owner/Operator)

Name: _____

Address: _____

City and State: _____

Contact Number: _____