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**INTERCONNECTION PROCEDURES,
FORMS, AND AGREEMENTS FOR CERTIFIED INVERTER-BASED
GENERATING FACILITIES NO LARGER THAN 25 kW***

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)

****This document is excerpted from CCEC’s overall Interconnection Policy and contains sections and attachments relative only to facilities no larger than 25kW.***

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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 Carteret-Craven Electric Cooperative].
 - 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 25 kW and no larger than 500 kW shall be evaluated under the Section 3— Fast Track Interconnection Process. (See Attachments 3 and 4 for certification criteria.)
- 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 neither 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.

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 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 500kW, 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 500 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 directly 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 25 kW but no larger than 500kW 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 500kW 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, which 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 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
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

A non-refundable processing fee of \$100 for residential and \$250 for commercial must accompany this Interconnection Request.

If the Interconnection Request is submitted solely due to a transfer of ownership of the Generating Facility, the fee is \$100 for residential and \$250 for commercial.

Interconnection Member

Name: _____

Contact Person: _____

Address: _____

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): _____

Cooperative: _____

Account Number: _____

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

Single Phase _____ Three Phase _____

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

Prime Mover: ☐ Photovoltaic ☐ Reciprocating Engine ☐ Fuel Cell ☐ Micro Turbine

☐ Other _____

Energy Source: ☐ 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.

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

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

Interconnection Member Signature

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

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: _____

Inspection

The Generating Facility has been installed and inspected in compliance with the local building/electrical code of _____

Signed (Local electrical wiring inspector, or attach signed electrical inspection): _____

Print Name: _____

Date: _____

As a condition of interconnection, you are required to send/fax a copy of this form along with a copy of the signed electrical permit to the Cooperative (Information Below):

Name: Christian Wiedner, Energy Services Specialist

Company: Carteret-Craven Electric Cooperative

Address: 1300 Highway 24 West • PO Box 1490

Newport, NC 28570

Fax: 252-247-0235

E-mail: christianw@ccemc.com

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 10kW**

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 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.