



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

**Interconnection Processes
and Procedures for
Generation Facility**

June 2011

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INTERCONNECTION PROCESSES AND PROCEDURES FOR GENERATION SYSTEMS

ATTACHMENTS

Attachment A: Definitions of Terms

Attachment B: Interconnection Process for Generation Facility Flow Diagram

Attachment C: Standard Interconnection Agreement for Distributed Generation Systems <10kW

Attachment D: Certification Codes and Standards

Attachment E: Engineering Data Submittal for the Interconnection of Generation Facility

Attachment F: Feasibility Study Agreement for Interconnection of Generation Facility

Attachment G: System Impact Study Agreement for Interconnection of Generation Facility

Attachment H: Facilities Study Agreement for Interconnection of Generation Facility

I. FORWARD

Electric distribution system connected generation units span a wide range of sizes and electrical characteristics. Electrical distribution system design varies widely from that required to serve the rural customer to that needed to serve the large commercial customer. With so many variations possible, it becomes complex and difficult to create one interconnection standard and procedure that fits all generation interconnection situations.

In establishing generation interconnection standards and procedures there are three main issues that must be addressed: Safety, Economics and Reliability.

The first and most important issue is safety - the safety of the general public and of the employees working on the electrical systems. This standard and procedures document establishes the technical requirements that must be met to ensure the safety of the general public and Brunswick Electric Membership Corporation (BEMC) employees and its system. Typically, designing the interconnection system for the safety of the general public will also provide protection for the interconnected equipment.

The second issue is economics - the interconnection design must be affordable to build. The interconnection standards and procedures must be developed so that only those items that are necessary to meet safety and reliability are included in the requirements. The standards and procedures contained in this document set the benchmark for the minimum required equipment. If it is not needed, it will not be required.

The third issue is reliability - the generation system must be designed and interconnected such that the reliability and the service quality for all members of BEMC are not compromised.

II. INTRODUCTION

This document has been prepared to explain the processes and requirements to interconnect a Generation Facility with BEMC. This document covers the interconnection process for all types of Generation Facility which meet the following criteria:

- A. Rated less than 10 MW and greater than 25 kW of total generation Nameplate Capacity
- B. Planned for interconnection with the BEMC's Distribution System
- C. Not intended for wholesale transactions
- D. Not anticipated to affect the transmission system.

To interconnect a Generation Facility with BEMC, there are several steps that must be followed. This document outlines those steps (see Section IV.) and the Parties' responsibilities. At any point in the process, if there are questions, please contact BEMC Interconnection Coordinator. Since this document has been developed to provide an interconnection process that covers a very diverse range of Generation Facilities, the process appears to be very involved and cumbersome. However, the process for many Generation Facilities is streamlined and provides an easy means for interconnection.

The standards and procedures in this document shall not apply to Generating Facilities already interconnected or approved for interconnection as of the effective date of this document, unless so agreed to by BEMC and the Interconnection Customer. However, the standards and procedures outlined in this document shall apply if the Interconnection Customer proposes Material Modifications or transfers ownership of the Generating Facility after that date.

III. GENERAL INFORMATION

A. BEMC Generation Interconnection Contacts

Questions that arise during the planning, design, and installation process of interconnecting generation to BEMC's system should be directed to one of two areas depending on the nature of the question.

Areas that involve energy rates and BEMC's load management program should be directed to BEMC's Connection Coordinator. Technical questions involving areas such as the design, installation, interconnection, or operation of generation should be directed to BEMC's Engineering department. In both instances, these people can be reached at the following address and phone number:

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B. Interconnection Request

To begin the process the Interconnection Customer shall submit a completed "Application for Interconnection of Generation Facility" (Attachment C) to BEMC, together with the non-refundable processing fee or deposit specified in the application. Section IV, of this document, outlines the complete interconnection process. If the application does not provide sufficient information, BEMC may request that the Interconnection Customer provide supplemental information. If the Interconnection Customer does not provide the necessary information within a reasonable period following such a request, the application will be deemed withdrawn.

C. Modification of the Interconnection Request

Material Modifications to the "Application for Interconnection of Generation Facility" by the Interconnection Customer are not permitted; nor are they effective absent any written agreement by BEMC, and may be deemed a withdrawal of the application such that re-submission of a new application may be required.

D. Site Control

Documentation of site control will not ordinarily be required when submitting the Application for Interconnection. However, BEMC may request satisfactory evidence of site control before BEMC 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, BEMC will typically require the Interconnection Customer to pay in advance for such

investment or to defray the costs of upgrades to, or installation of, facilities necessary for interconnection. The Interconnection Customer 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 Customer must submit documentation of site control to BEMC at or before the time of final execution of the Interconnection Agreement. Site control may be demonstrated through:

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

E. Queue Position

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

F. Interconnection Requests Submitted Prior to the Effective Date of these Procedures

Nothing in this document affects an Interconnection Customer'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 the procedures outlined in this document.

G. Engineering Screening

During the process of designing an interconnection between a Generation Facility and BEMC, there are several studies which may need to be undertaken. On the Applicant's side of the interconnection the addition of a Generation Facility may increase the fault current levels, even if the generation is never interconnected with the BEMC's electrical system. The Interconnection Customer may need to conduct a fault current analysis of their electrical system in conjunction with adding the Generation Facility. The addition of the Generation Facility may also affect BEMC and special engineering studies may need to be undertaken to look at BEMC's electrical system with the Generation Facility included.

While it is not a straight forward process to identify which engineering studies are required, certain criteria can help to identify which Generation Facility may require further analysis. The following is the basic screening criteria to be used for this interconnection process.

1. The proposed Generating Facility's Point of Interconnection must be on a portion of BEMC's Distribution System.

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 BEMC's System connected to a member bounded by automatic sectionalizing devices or the end of the distribution line.
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.
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 Customer 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.
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 Customer, including line configuration and the transformer connection to limit the potential for creating over-voltages on BEMC'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

6. If the Generating Facility system is integrated with storage, the inverter must be certified so as to rule out any risk of backfeeding.
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.
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.
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).

10. No construction of facilities by BEMC on its own System shall be required to accommodate the Generating Facility.
11. If the proposed interconnection passes the screens, the Interconnection Request shall be approved and the BEMC will provide the Interconnection Customer an executable Interconnection Agreement after the determination.
12. If the proposed interconnection fails the screens, but BEMC determines that the Generating Facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, BEMC may provide the Interconnection Customer an executable Interconnection Agreement.
13. If the proposed interconnection fails the screens, but BEMC 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 Customer is willing to consider minor modifications or further study, BEMC may provide the Interconnection Customer with the opportunity to attend an information sharing meeting to discuss what options may be available to the Interconnection Customer.

H. Information Sharing Meeting

During Step 2 of this process, as outlined in Section IV, the Applicant or BEMC has the option to request an information sharing meeting. The purpose of the information sharing meeting shall be to discuss the Applicant's interconnection request and review the application filed. This information sharing meeting is to be held so that each Party can gain a better understanding of the issues involved with the requested interconnection.

BEMC and the Applicant shall bring to the meeting personnel, including system engineers, and other resources as may be reasonably required, to accomplish the purpose of the meeting. The Applicant shall not expect BEMC to complete the preliminary review of the proposed Generation Facility at the information sharing meeting. If an information sharing meeting is requested, BEMC shall schedule the information sharing meeting within the 15 business day review period allowed for in Step 2. BEMC shall then have an additional 5 days, after the completion of the information sharing meeting to complete the formal response required in Step 2.

BEMC and the Applicant shall further discuss whether BEMC should perform a Feasibility Study or proceed directly to a System Impact Study, a Facilities Study, or an Interconnection Agreement. If BEMC and the Applicant agree that a Feasibility Study should be performed, the Cooperative will provide the Interconnection Customer a Feasibility Study Agreement (Attachment F), including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study. If BEMC and the Applicant agree not to perform a Feasibility Study, but to proceed directly to a System Impact Study or Facilities Study, BEMC will provide the Interconnection Customer either a System Impact Study Agreement (Attachment G) or a Facilities Study Agreement (Attachment H), 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. If BEMC and the Applicant agree not to perform a Feasibility Study, but to proceed directly to an Interconnection Agreement, the Cooperative shall provide the Interconnection Customer an executable Interconnection Agreement (Attachment I).

The Application fee shall cover BEMC's costs for this information sharing meeting. There shall be no additional charges imposed by BEMC for this initial information sharing meeting.

I. Feasibility Study

1. The Feasibility Study shall identify any potential adverse system impacts that would result from the interconnection of the Generating Facility.
2. In order to remain in consideration for interconnection, the Interconnection Customer must return the executed Feasibility Study Agreement within 15 business days.
3. A deposit of at least of 50% of the estimated cost of the Feasibility Study shall be required from the Interconnection Customer prior to the start of the Study.
4. The scope of and cost responsibilities for the Feasibility Study are described in the Feasibility Study Agreement.
5. If the Feasibility Study shows no potential for adverse system impacts, BEMC will send the Interconnection Customer 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, BEMC shall send the Interconnection Customer an executable Interconnection Agreement.
6. If the Feasibility Study shows the potential for adverse system impacts, the review process shall proceed to the appropriate System Impact Studies.

J. System Impact Studies

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 information sharing meeting. The System Impact Studies shall evaluate the impact of the proposed interconnection on the reliability of the electric system.
2. If potential adverse Distribution System impacts are identified in the information sharing meeting or shown in the Feasibility Study, a Distribution System Impact Study must be performed. BEMC will send the Interconnection Customer a Distribution System Impact Study Agreement after transmittal of the Feasibility Study or the information sharing 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.
3. If potential adverse Transmission System impacts are identified in the information sharing meeting or shown in the Feasibility Study or Distribution System Impact Study, a Transmission System Impact Study must be performed. BEMC will send the Interconnection Customer a Transmission System Impact Study Agreement after transmittal of the Feasibility Study or Distribution System Impact Study or the information sharing 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. In order to remain under consideration for interconnection, the Interconnection Customer must return an executed System Impact Study Agreement within 30 business days.
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 Customer.
6. The scope of and cost responsibilities for a System Impact Study are described in the System Impact Study Agreement.
7. If the System Impact Studies show no potential for adverse system impacts, BEMC will send the Interconnection Customer 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, BEMC will send the Interconnection Customer an executable Interconnection Agreement.

K. Facilities Study

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.
2. BEMC shall design any required Interconnection Facilities and/or Upgrades under the Facilities Study Agreement. BEMC may contract with consultants to perform activities required under the Facilities Study Agreement. The Interconnection Customer and BEMC may agree to allow the Interconnection Customer 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 BEMC, 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, BEMC will make sufficient information available to the Interconnection Customer in accordance with confidentiality and critical infrastructure requirements to permit the Interconnection Customer to obtain an independent design and cost estimate for any necessary facilities.
3. In order to remain under consideration for interconnection, or, as appropriate, in BEMC's interconnection queue, the Interconnection Customer must return the executed Facilities Study Agreement or a request for an extension of time within 30 business days.
4. A deposit of the good faith estimated costs for the Facilities Study may be required from the Interconnection Customer.
5. The scope of and cost responsibilities for the Facilities Study are described in the Facilities Study Agreement.
6. Upon completion of the Facilities Study, and with the agreement of the Interconnection Customer to pay for Interconnection Facilities and Upgrades identified in the Facilities Study, BEMC shall provide the Interconnection Customer an executable Interconnection Agreement.

L. Insurance

1. In connection with the Interconnection Customer's performance of its duties and obligations under this Agreement, the Interconnection Customer shall maintain, during the term of the Agreement, general liability insurance from a qualified insurance agency with a B+ or better rating by "Best" and with a combined single limit of not less than:
 - a. For a non-residential Interconnection Customer proposing to interconnect a Generating Facility no larger than 1,000 kW, the minimum coverage shall be comprehensive general liability insurance with coverage at least \$300,000 per occurrence.
 - b. For a non-residential Interconnection Customer proposing to interconnect a Generating Facility larger than 1,000 kW, the minimum coverage shall be comprehensive general liability insurance with coverage at least \$1,000,000 per occurrence.
 - c. For a residential Interconnection Customer, the minimum coverage shall be at a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence.
 - d. Such general liability insurance shall include coverage against claims for damages resulting from:
 - i. bodily injury, including wrongful death and
 - ii. property damage arising out of the Interconnection Customer's ownership and/or operating of the Generation Facility under the Interconnection Agreement.
2. The general liability insurance required shall, by endorsement to the policy or policies:
 - a. Include BEMC as an additional insured;
 - b. Contain a severability of interest clause or cross-liability clause;
 - c. Provide that BEMC shall not by reason of its inclusion as an additional insured incur liability to the insurance carrier for the payment of premium for such insurance; and
 - d. Provide for thirty (30) calendar days written notice to BEMC prior to cancellation, termination, alteration, or material change of such insurance.
3. The Interconnection Customer shall furnish the required insurance certificates and endorsements to BEMC prior to the initial operation of the Generation Facility. Thereafter, BEMC shall have the right to periodically inspect or obtain a copy of the original policy or policies of insurance.
4. Evidence of the insurance required in Section L.1. shall state that coverage provided is primary and is not in excess to or contributing with any insurance or self-insurance maintained by BEMC.
5. If the Interconnection Customer is self-insured with an established record of self-insurance in accordance with commercially acceptable risk management practices, the Interconnection Customer may comply with the following in lieu of Section L.1 – 4:
 - a. Interconnection Customer's shall provide to BEMC, at least thirty (30) days prior to the date of initial operation, evidence of an acceptable plan to self-insure to a level of coverage equivalent to that required under section L.1.
 - b. If Interconnection Customer ceases to self-insure to the level required hereunder, or if the Interconnection Customer is unable to provide continuing evidence of its ability to self-

insure, the Interconnection Customer agrees to immediately obtain the coverage required under section L.1.

- c. Failure of the Interconnection Customer or BEMC to enforce the minimum levels of insurance does not relieve the Interconnection Customer from maintaining such levels of insurance or relieve the Interconnection Customer of any liability

M. Non-Warranty

Neither by inspection, if any, or non-rejection, nor in any other way, does BEMC give any warranty, expressed or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed or maintained by the Applicant or leased by the Applicant from third parties, including without limitation the Generation Facility and any structures, equipment, wires, appliances, or devices pertinent thereto.

N. Reasonable Efforts

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

O. Disputes

The Parties agree to attempt to resolve all disputes arising out of the interconnection process according to the provisions of this section. 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. 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. 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 BEMC. 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 BEMC is located. If mediation fails to resolve the dispute, each Party is then free to pursue its legal remedies, if any.

P. Interconnection Metering

Any metering necessitated by the use of the Generating Facility shall be installed at the Interconnection Customer's expense in accordance with all applicable regulatory requirements and BEMC's specifications. BEMC shall maintain ownership of all metering and shall also be responsible for the maintenance and testing of said metering.

Q. Commissioning

Commissioning tests of the Interconnection Customer's installed equipment shall be performed pursuant to applicable codes and standards. BEMC 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.

R. Confidentiality

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.”

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.

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.
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.

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.

S. Coordination with Affected Systems

BEMC 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. BEMC will endeavor to include such Affected System operators in all meetings held with the Interconnection Customer. The Interconnection Customer will cooperate with BEMC in all matters related to the conduct of studies and the determination of modifications to Affected Systems.

IV. PROCESS FOR INTERCONNECTION

Step 1 – Application (By Applicant)

Once a decision has been made by the Applicant that they would like to interconnect a Generation Facility with BEMC, the Applicant shall supply BEMC with the following information:

1. Completed Generation Interconnection Application (Appendix C), including:
 - a. One-line diagram showing the Point of Interconnection.
 - b. Site plan of the proposed installation
 - c. Proposed schedule of the installation
2. Payment of the application fee.

This application fee is to partially offset BEMC's labor costs for administration, review of the design concept, and preliminary engineering screening for the proposed Generation Facility interconnection.

3. Completed Engineering Data Submittal (Appendix E) (if applicable), including:
 - a. One-line diagram of the generation system showing:
 - i. The generator installation
 - ii. Transfer switch/switchgear
 - iii. Service entrance
 - iv. Lockable and visible disconnect
 - v. Protection and metering CTs and VTs
 - vi. Protective relaying and generator control system
 - b. Detailed information on the proposed equipment, including:
 - i. Wiring diagrams
 - ii. Models and types
 - c. Proposed relay settings for all interconnection required relays
 - d. Detailed site plan of the Generation Facility
4. Proof of insurance (if applicable):
 - a. See Appendix I: Paragraph 11. Insurance or Section III, Subsection L., for detailed requirements

Step 2 – Preliminary Review (By BEMC)

Within 15 business days of receipt of all the information listed in Step 1, BEMC shall respond to the Applicant with the information listed below. (If the information required in Step 1 is not complete, the Applicant will be notified within 10 business days of what is missing and no further review will be completed until the missing information is submitted. The 15 day clock will restart with the new submittal.)

1. Contact names with BEMC for this project
2. Approval or rejection of the generation interconnection request
 - a. Rejection – BEMC shall supply the technical reasons, with supporting information, for rejection of the interconnection Application.
 - b. Approval – An approved Application is valid for 6 months from the date of the approval. BEMC may extend this time if requested by the Applicant.
3. If additional specialized engineering studies are required for the proposed interconnection, the following information will be provided to the Applicant.
 - a. General scope of the engineering studies required
 - b. Estimated cost of the engineering studies
 - c. Estimated duration of the engineering studies
 - d. Additional information required to allow the completion of the engineering studies
 - e. Study authorization agreement
4. Comments on the schedule provided

As part of Step 2 the proposed Generation Facility will be screened to see if additional Engineering Studies are required. The base screening criteria are listed in Section III, Subsection G. of this document.

Step 3 – Go/No-Go Decision for Engineering Studies (By Applicant)

In this step, the Applicant will decide whether or not to proceed with the required engineering studies for the proposed generation interconnection. If no specialized engineering studies are required by BEMC, this step will automatically be skipped by BEMC and the Applicant.

If the Applicant decides NOT to proceed with the engineering studies, the Applicant shall notify the BEMC Generation Interconnection Coordinator, so other generation interconnection requests in the queue are not adversely impacted. Should the Applicant decide to proceed, the Applicant shall provide the following to BEMC:

1. Payment required by BEMC for the specialized engineering studies
2. Additional information requested by BEMC to allow completion of the engineering studies

Step 4 – Engineering Studies (By BEMC)

In this step, BEMC will be completing the specialized engineering studies for the proposed generation interconnection, as outlined in Step 2. These studies should be completed in the time frame provided in Step 2 by BEMC. If additional time is required to complete the engineering studies, BEMC shall notify the Applicant and provide the reasons for the time extension.

If BEMC determines that the actual costs for the engineering studies will exceed the estimated amount by more than 10%, the Applicant shall be notified. BEMC shall provide the reason(s) for the studies needing to exceed the original estimated amount and provide an updated estimate of the total cost for the engineering studies. The Applicant shall be given the option of either withdrawing the application or paying the additional estimated amount to continue with the engineering studies.

Step 5 – Study Results and Construction Estimates (By BEMC)

Upon completion of the specialized engineering studies, or if none was necessary, the following information will be provided to the Applicant:

1. Results of the engineering studies, if needed
2. Monitoring & control requirements for the proposed generation
3. Special protection requirements for the Generation Facility interconnection
4. Comments on the schedule proposed by the Applicant
5. Interconnection Agreement
6. Cost estimate and payment schedule for required BEMC work, including, but not limited to:
 - a. Labor costs related to the final design review
 - b. Labor and expense costs for attending meetings
 - c. Required dedicated facilities and other BEMC modification(s)
 - d. Final acceptance testing costs

Step 6 – Final Go/No-Go Decision (By Applicant)

In this step, the Applicant shall again have the opportunity to indicate whether or not they want to proceed with the proposed generation interconnection. If the decision is NOT to proceed, the Applicant will notify BEMC so that other generation interconnections in the queue are not adversely impacted. Should the Applicant decide to proceed, a more detailed design, if not already completed by the Applicant, must be done, and the following information is to be supplied to BEMC:

1. Applicable up-front payment required by BEMC per Payment Schedule provided in Step 5
2. Signed Interconnection Agreement
3. Final proposed schedule incorporating the BEMC comments. The schedule of the project should include such milestones as foundations poured, equipment delivery dates, all conduit installed, cutover (energizing of the new switchgear/transfer switch), BEMC work, relays set and tested, preliminary vendor testing, final BEMC acceptance testing, and any other major milestones.
4. Detailed one-line diagram of the Generation Facility, including the generator, transfer switch/switchgear, service entrance, lockable and visible disconnect, metering, protection and metering CTs / VTs, protective relaying and generator control system.
5. Detailed information on the proposed equipment, including wiring diagrams, models and types.
6. Proposed relay settings for all interconnection required relays.
7. Detailed site plan of the Generation Facility.
8. If applicable, drawing(s) showing the monitoring system as specified by BEMC including a drawing which shows the interface terminal block with the BEMC monitoring system.
9. Proposed testing schedule and initial procedure, including:
 - a. Time of day (after-hours testing required?)
 - b. Days required
 - c. Testing steps proposed

Step 7 – Final Design Review (By BEMC)

Within 15 business days of receipt of the information required in Step 6, BEMC will provide the Applicant with an estimated time table for final review. If the information required in Step 6 is not complete, the Applicant will be notified within 10 business days what information is missing. No further review may be completed until the missing information is submitted. The 15 business day clock will restart with the new submittal. This final design review shall not take longer than 15 additional business days to complete, for a total of 30 business days.

During this step, BEMC shall complete the review of the final Generation Facility design. If the final design has significant changes from the Generation Facility proposed on the original Application which invalidates the engineering studies or the preliminary engineering screening, the Application for Interconnection request may be rejected by BEMC and the Applicant may be requested to reapply with the revised design.

Upon completion of this step, BEMC shall supply the following information to the Applicant:

1. Requested modifications or corrections of the detailed drawings provided by the Applicant.
2. Approval of and agreement with the Project Schedule. (This may need to be interactively discussed between the Parties during this Step)
3. Initial testing procedure review comments. (Additional work on the testing process will occur during Step 8, once the actual equipment is identified)

Step 8 – Order Equipment and Construction (By BEMC /Applicant)

The following activities shall be completed during this step. For larger installations this step will involve much interaction between the Parties. It is typical for approval drawings to be supplied by the Applicant to BEMC for review and comments. It is also typical for BEMC to require review and approval of the drawings which cover the interconnection equipment and interconnection protection system. If remote control and/or monitoring are also required by BEMC, those drawings are also exchanged for review and comment.

1. By the Applicant's personnel
 - a. Ordering of Generation Facility equipment
 - b. Installing Generation Facility
 - c. Submit approval drawings for interconnection equipment and protection systems, as required by BEMC
 - d. Provide final relay settings to BEMC
 - e. Submit completed and signed Engineering Data Submittal form (Appendix E)
 - f. Submit proof of insurance as required by BEMC interconnection agreements
 - g. Submit required State of North Carolina electrical inspection forms to BEMC
 - h. Inspecting and functional testing of Generation Facility components
 - i. Work with BEMC personnel and equipment vendor(s) to finalize the installation testing procedure
2. By BEMC personnel
 - a. Ordering any necessary BEMC equipment
 - b. Installing and testing any required equipment
 - i. Monitoring facilities
 - ii. Dedicated Equipment
 - c. Assisting Applicant's personnel with interconnection installation coordination issues
 - d. Providing review and input for testing procedures

Step 9 – Final Tests (By BEMC / Applicant)

(Due to equipment lead times and construction, a significant amount of time may take place between the execution of Step 8 and Step 9.) During this time the final test steps are developed and the construction of the facilities are completed. Final acceptance testing will commence when all equipment has been installed, all contractor preliminary testing has been accomplished and all BEMC preliminary testing of the monitoring and dedicated equipment is completed. One to three weeks prior to the start of the acceptance testing of the generation interconnection the Applicant shall provide a report stating:

- That the Generation Facility meets all interconnection requirements

- All contractor preliminary testing has been completed
- The protective systems are functionally tested and ready
- Provides a proposed date that the Generation Facility will be ready to be energized and acceptance tested.

For smaller systems, scheduling of this testing may be more flexible as less testing time is required than for larger systems. In some cases this testing may be done after hours to ensure no typical business-hour load is disturbed. If acceptance testing occurs after hours, BEMC's labor will be billed at overtime wages. During this testing BEMC will typically run three different tests. These tests can differ depending on which type of communication / monitoring system(s) BEMC decides to install at the site. For problems created by BEMC or any BEMC equipment that arise during testing, BEMC will fix the problem as soon as reasonably possible. If problems arise during testing which are caused by the Applicant or Applicant's vendor or any vendor supplied or installed equipment, BEMC will leave the project until the problem is resolved. Having the testing resume will then be subject to BEMC personnel time and availability.

Step 10 (By BEMC)

After all BEMC's acceptance testing has been accomplished and all requirements are met, BEMC shall provide written approval for normal operation of the Generation Facility interconnection, within 3 business days of successful completion of the acceptance tests.

Step 11 (By Applicant)

Within two (2) months of interconnection, the Applicant shall provide BEMC with updated drawings and prints' showing the Generation Facility as it was when approved for normal operation by BEMC. The drawings shall include all changes which were made during construction and the testing process.

V. ATTACHMENTS

Attached are several documents which may be required for the interconnection process. They are as follows:

Attachment A: Definitions of Terms

Attachment B: Interconnection Process for Generation Facility Flow Diagram

Attachment C: Application for Interconnection of Generation Facility

Attachment D: Certification Codes and Standards

Attachment E: Engineering Data Submittal

Attachment F: Feasibility Study Agreement

Attachment G: System Impact Study Agreement

Attachment H: Facilities Study Agreement

ATTACHMENT A



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

Definitions of Terms

Definitions of Terms

Affected System – An electric system, other than BEMC’s System, which 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.

Application for Interconnection – The Interconnection Customer’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 BEMC’s System.

BEMC – Brunswick Electric Membership Corporation. The entity that owns, controls, or operates facilities used for providing electric service in its designated service area that the Interconnection Customer is located.

Business Day – Monday through Friday, excluding state holidays.

Closed Transition Transfer – Method of transferring the local loads between BEMC’s system and the generator such that the generator and BEMC’s system are interconnected for a short time (100 msec. or less).

Commission – The North Carolina Utilities Commission. It should be noted that the Commission does not have regulatory authority over BEMC regarding Interconnection Agreements, Procedures and Forms. BEMC is governed by its Board of Directors, which approves BEMC’s policies, service rules, regulations, procedures, and rates. As a borrower from the Rural Utilities Service (RUS) of the U.S. Department of Agriculture, BEMC 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).

Dedicated Facilities – The equipment that is installed due to the interconnection of the Generation Facility and not required to serve other BEMC customers.

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 system, having an installed capacity of not more than 10 MVA / 10 MW, connected to BEMC’s electric power distribution system through a point of common coupling. Distributed resources include both generators of electricity and electric storage technologies.

Distribution System – BEMC’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 differs among areas.

Distribution Upgrades – The additions, modifications, and upgrades to BEMC’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 BEMC and to inject electricity onto BEMC's System. Distribution Upgrades do not include Interconnection Facilities.

Electric Power System – Electric facilities that deliver electric power to a load. Note: This may include generation units.

Extended Parallel – The Generation Facility is designed to remain connected with BEMC for an extended period of time.

Generation – Any device producing electrical energy (i.e., rotating generators driven by wind, steam turbines, internal combustion engines, hydraulic turbines, solar, fuel cells, etc.) or any other electric producing device, including energy storage technologies.

Generation Interconnection Coordinator – The person or persons designated by BEMC to provide a single point of coordination with the Applicant for the generation interconnection process.

Generating Facility – The Interconnection Customer's Distributed Resource device for the production of electricity identified in the Interconnection Request, but shall not include the Interconnection Customer'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 Customer, BEMC, or any affiliate thereof.

Interconnection Customer – The party or parties who will own/operate the Generation Facility and are responsible for meeting the requirements of the agreements and Technical Requirements. This could be the Generation Facility applicant, installer, owner, designer, or operator.

Interconnection Facilities – BEMC's Interconnection Facilities and the Interconnection Customer'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 BEMC's System. Interconnection Facilities are sole use facilities and shall not include Upgrades.

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.

Nameplate Capacity: The total nameplate capacity rating of all the Generation included in the Generating Facility. For this definition the "standby" and/or maximum rated KW capacity on the nameplate shall be used.

Network Upgrades – Additions, modifications, and upgrades to BEMC's Transmission System required to accommodate the interconnection of the Generating Facility to BEMC's System. Network Upgrades do not include Distribution Upgrades. Upgrades of this sort may be required for Generating Systems greater than 1,000 /1 MW but less than 10 MVA / 10 MW.

Open Transition Transfer – Method of transferring the local loads between BEMC’s system and the generator such that the generator and BEMC’s system are never interconnected.

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

Party or Parties – BEMC, Interconnection Customer, and possibly the owner of an Affected System, or any combination of the above.

Point of Delivery – The point where the energy changes possession from one party to the other. Typically this will be where the metering is installed, but it is not required that the Point of Delivery is the same as where the energy is metered

Point of Interconnection – The point where the Interconnection Facilities connect with BEMC’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 BEMC 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.

Soft Loading Transfer: Method of transferring the local loads between BEMC’s system and the generator such that the generator and BEMC’s system are interconnected for a limited amount of time (generally less than three minutes). If the interconnection extends beyond three minutes, the interconnection is then defined as extended parallel.

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

Study Process – The procedure for evaluating an Application for Interconnection that includes the information sharing meeting, Feasibility Study, System Impact Study, and Facilities Study.

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

Transmission System – The transmission facilities owned, controlled or operated by either BEMC or the investor-owned utility to which BEMC’s System is interconnected.

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

ATTACHMENT B

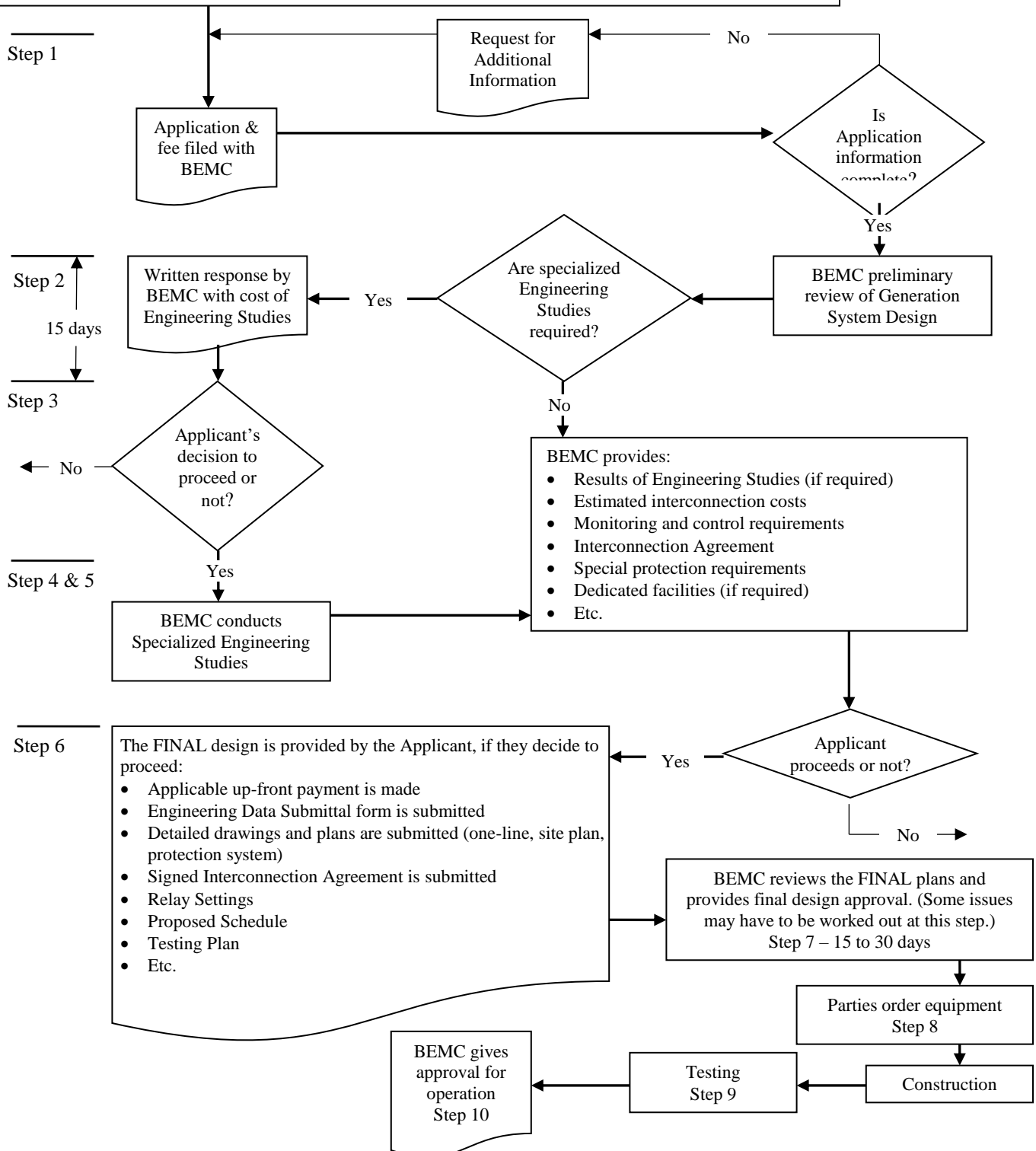


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Interconnection Process for Generation Facility Flow Diagram Summary

Interconnection Process for Generation Facility Flow Diagram Summary

Before beginning the process, the applicant or their consultant should first obtain information on BEMC's requirements for interconnection of a generator, have a basic design concept in mind, and have an electrical one-line diagram of the project prepared. Please contact BEMC's Interconnection Coordinator for more information at (910) 754-4391.



ATTACHMENT C



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

**Standard Interconnection
Agreement for Distributed
Generation Systems <10kW**



**STANDARD INTERCONNECTION AGREEMENT
FOR DISTRIBUTED GENERATION SYSTEMS <10kW**

This STANDARD INTERCONNECTION AGREEMENT, (the "Agreement"), is entered into as of _____
_____, 20____, (the "Effective Date"), by and between _____
_____, hereinafter called "Member", and Brunswick Electric Membership Corporation, hereinafter called
"Company". Member and Company are hereinafter collectively referred to as the "Parties" or "Party."
In consideration of the mutual covenants set forth herein, the Parties agree as follows:

1. SCOPE OF AGREEMENT:

- (a) This Agreement relates solely to the conditions under which Company and Member agree that Member's generation system and equipment, hereinafter the "Generator", and located at or near (address: _____) may be interconnected to and operated in parallel with Company's electric system. This Agreement does not authorize Member to export power or constitute an agreement to purchase or wheel Member's power. Other services that Member may require from Company shall be covered under separate agreements.
- (b) Company will supply the electrical requirements of Member that are not supplied by Member's Generator. Such electric service shall be supplied to Member under Company's rates schedules, and services regulations applicable to Member's class of service.

2. INTERCONNECTION:

- (a) Company hereby authorizes Member to interconnect and commence operation under the terms of this Agreement on or after (date _____) subject to Member having received Company's written acceptance specified in 2. (f) below.
- (b) Member's Generator must be manufactured, installed and operated in accordance with governmental and industry standards, including, but not necessarily limited to, standards referenced in Appendix A.
- (c) The nameplate output of the Generator is _____kW in the form of ___ phase, wires, alternating current of 60 hertz frequency and at _____ volts. (Not to exceed 100 kW)
- (d) The point of interconnection between Member and Company hereunder will be _____.
- (e) Member shall not interconnect Member's Generator with Company's electric system nor commence parallel operation of Member's Generator until both Parties have accepted this Agreement and the requirements for interconnection stated in the Interconnection Standard have been met. Company shall have the right and opportunity to have representatives present at the initial testing of Member's protective apparatus. Member shall notify Company 5 _____ (five) business days prior to the initial testing. In the event Member has interconnected Member's Generator without Company's acceptance of this Agreement or the Generator has not met the requirements of the Interconnection Standard, Company shall have the right to

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immediately isolate Member's premises and/or Generator from Company's system until Company's acceptance is granted and the requirements of the Interconnection Standard have been met.

- (f) Member shall not make any changes to the Generator output capacity and/or modification to the protection system required to meet the Interconnection Standard without notice to and written acceptance from Company before making the changes to the Generator.
- (g) Isolation Device: Member shall install a manual load-break disconnect switch with a clear visible indication of switch position between Company's electric system and Member's Generator. The Isolation Device shall be installed as specified in the Interconnection Standard.
- (h) Warning Label: Member will install a permanent warning label in a conspicuous place in close proximity to the electric meter or on the meter base to notify Company personnel that there is a generator installed on the load side of the meter. The warning label shall not be placed in a location that would interfere with the ability of Company personnel to read the electric meter. Member shall also place a warning label on the Isolation Device. Company will provide the warning labels to Member. The warning labels must be in place before the Generator can be interconnected with Company's system.

4. INTERCONNECTION COST: The cost to Member for all Company owned and maintained facilities constructed and/or installed by Company to accommodate the interconnection and safe operation of Member's Generator in parallel with Company's electric system shall be determined in accordance with Company's applicable Service Regulations.

5. RIGHT OF ACCESS AND EQUIPMENT INSTALLATION:

- (a) Access To Premises: The duly authorized agents of Company shall have the right of ingress and egress to the premises of Member at all reasonable hours, over the same general route as Member utilizes, for the purpose of reading meters, inspecting Company's wiring and apparatus, changing, exchanging, or repairing its property on the premises of Member and to remove such property at the time of or at any time after the suspension of interconnection of the Generator or termination of this Agreement. Company shall have access to Member's Isolation Device at all times.
- (b) Company's obligation to provide the interconnection as covered in this Agreement on the agreed upon Effective Date is contingent upon Company receiving the rights-of-way and receiving the necessary equipment in sufficient time to install it on or before that date.

5. MAINTENANCE OF INTERCONNECTION FACILITIES: Member shall maintain Member's Generator and all related Member-owned protective equipment and facilities in a safe and prudent manner, conforming to all applicable laws and regulations. Member shall reimburse Company for any and all losses, damages, claims, penalties or liability Company incurs as a result of Member's failure to maintain the Generator, equipment, and facilities in a safe and prudent manner or failure to obtain and/or maintain any governmental authorizations or permits required for construction and operation of Member's facility.

6. DISCONNECTION OF GENERATOR: Company may isolate Member's premises and/or

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Generator from Company's system when necessary in order to construct, install, repair, replace, remove, investigate, or inspect any of Company's equipment or part of Company's system; or if Company determines that isolation of Member's premises and/or Generator from Company's system is necessary because of emergencies, forced outages, Force Majeure or compliance with prudent electrical practices. Whenever feasible, Company shall give Member reasonable notice of the possible isolation of Member's premises and/or Generator from Company's system.

Notwithstanding any other provision of this Agreement, if at any time Company determines that either the Generator may endanger Company's personnel or other persons or property, or the continued operation of Member's Generator may endanger the integrity or safety of Company's electric system, Company shall have the right to isolate Member's premises and/or Generator from Company's system. It is agreed that Company shall have no liability for any loss of sales or other damages, including all punitive and consequential damages for the loss of business opportunity, profits, or other losses, regardless of whether such damages were foreseeable, for the isolation of Member's premises and/or Generator from Company's system per this Agreement. Company shall expend reasonable effort to reconnect the Member's premises and/or Generator with the Company's system in a timely manner.

- 7. PERMITS AND APPROVALS:** Member shall obtain all environmental and other permits required by governmental authorities prior to construction, installation, and interconnection of the Generator. Member shall also maintain these applicable permits and compliance with these permits during the term of this Agreement.
- 8. INDEMNITY AND LIABILITY:**
 - (a) **Limitation of Liability:** Each party's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission hereunder, shall be limited to the amount of direct damage actually incurred. In no event shall either party be liable to the other party for any indirect, special, incidental, consequential, or punitive damages of any kind.
 - (b) **Indemnification:** The parties shall at all times indemnify, defend and save the other party harmless from any and all damages, losses, claims, including claims and actions relating to injury 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 other party's action or inaction of its obligations hereunder on behalf of the indemnifying party, except in cases of gross negligence or intentional wrongdoing by the indemnified party.
 - (c) The provisions of Section 8.(a) shall not be construed to relieve any insurer of its obligations to pay any claims in accordance with the provision of any valid insurance policy.
 - (d) If Member at any time fails to comply with the insurance provisions of this Agreement, Member shall, at its own cost, defend, save harmless and indemnify Company, its directors, officers, employees, agents, assignees, and successors in interest from and against any and all loss, liability, damage, claim, cost, charge, demand, or expense of any kind or nature (including attorneys fees and other costs of litigation) resulting from the death or injury to any person or damage to any property, including the personnel and property of Company, its

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contractors, its customers, and/or the public to the extent that Company would have been protected had Member complied with all such insurance provisions. The inclusion of this Section 8.(d) is not intended to create any express or implied right in Member to elect not to provide any such required insurance.

- (e) Member shall be responsible for installing and maintaining devices adequate to protect against damages caused by irregularities or outages on Company's system, regardless of the cause or fault, including devices to protect against voltage fluctuations and single phasing.

9. INSURANCE:

- (a) Member shall obtain and retain, for as long as its Generator is interconnected with the Company's system, liability insurance which protects Member from claims for bodily injury and/or property damage. For a non-residential Member the minimum coverage shall be comprehensive general liability insurance with coverage at least \$300,000 per occurrence and for a residential Member the minimum coverage shall be at a standard homeowner's insurance policy with liability coverage in the amount of at least \$100,000 per occurrence. Prior to interconnection of the Generator with Company's system, Member shall furnish a properly executed certificate of insurance to Company clearly evidencing the required coverage and any exclusions applicable to such coverage. The certificate shall provide that the insurance coverage shall not be canceled or modified unless and until Company receives at least thirty (30) days prior written notice. Member shall further replace such certificates for policies expiring during the period its Generator is interconnected with Company's system. Company has the right to refuse to establish or continue the interconnection of Member's generation facility to Company's system if such insurance is not in effect.
- (b) Insurance on the premises where the Member's Generator is located shall, by endorsement to the policy or policies, provide for thirty (30) days of written notice to Company prior to cancellation, termination, alteration, or material change of such insurance.

10. FORCE MAJEURE: For purposes of this Agreement, Force Majeure shall mean any act of God, labor disturbance, act of the public enemy, war, terrorism, insurrection, riot, fire, storm, flood or other extreme weather condition, explosion, breakage or accident to machinery or equipment, any order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other caused beyond a Party's control. A Force Majeure event does not include an act of negligence or intentional wrongdoing.

13. NON-WARRANTY: Company's approvals given pursuant to this Agreement or actions taken hereunder shall not be construed as any warranty or representation to Member or any third party regarding the safety, durability, reliability, performance or fitness of Member's generation and service facilities, its control or protective devices or the design, construction, installation or operation thereof.

14. EFFECTIVE TERM AND TERMINATION RIGHTS: This Agreement becomes effective when executed by both parties and shall continue in effect until terminated. The Agreement may be terminated in accordance with the following:

- (a) If Member desires to terminate the Agreement, Company will agree to such termination if Company is satisfied that Member no longer can operate Member's Generator in parallel with

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Company's system at the premises and all bills for services previously rendered to Member, plus any applicable termination charges, have been paid. Company may waive the termination charges if Company has secured or expects to secure from a new occupant or operator of the premises an Agreement satisfactory to Company for the interconnection to Company for a term not less than the unexpired portion of Member's Agreement.

- (b) Company, in addition to all other legal remedies, may either terminate the Agreement or suspend interconnection with Member (1) for any default or breach of Agreement by Member, (2) for failure to pay any applicable bills when due and payable, (3) for a condition on Member's side of the point of interconnection actually known by Company to be, or which Company reasonably anticipates may be, dangerous to life or property, (4) if Member either fails to energize the Generator within 12 months of the Effective Date of this Agreement or permanently abandons the Generator, or (5) by giving the Member at least sixty (60) days notice in the event that there is a material change in an applicable rule or statute concerning interconnection and parallel operation of the Generator, unless the Member's installation is exempted from the change or the Member complies with the change in a timely manner. No such termination or suspension, however, will be made by Company without written notice delivered to Member, personally or by mail, stating what in particular in the Agreement has been violated, except that no notice need to be given in instances set forth in 12.(b)(3) above. Failure to operate the Generator for any consecutive 12 month period after the Effective Date shall constitute permanent abandonment unless otherwise agreed to in writing between the Parties.

13. GENERAL:

- (a) This Agreement and any other applicable documents are subject to changes or substitutions, either in whole or in part, as may be necessary to conform to applicable law. Unless specified otherwise, any such changes or substitutions shall become effective immediately and shall nullify all prior provisions in conflict therewith.
- (b) Headings: The descriptive headings of the various sections of this Agreement have been inserted for convenience of reference only and are to be afforded no significance in the interpretation or construction of this Agreement.

14. ENTIRE AGREEMENT: This Agreement and the documents attached hereto constitute the entire Agreement between the Parties relating to the subject matter hereof, there being no other agreements or understandings, written or oral, other than those contained in this Agreement and the attachments hereto. This Agreement does not modify, change or impact any other agreement between the Parties relating to the supply of electric service, or the sale of, or purchase of, electric power.

17. AMENDMENTS: The Parties may amend this Agreement but such amendment may only be effective and enforceable if it is set forth in a written instrument signed by both Parties.

18. ASSIGNMENT: Member shall not assign its rights nor delegate its duties under this Agreement without Company's written consent. Any assignment or delegation Member makes without Company's written consent shall not be valid. Company shall not unreasonably withhold its consent to Member's assignment of this Agreement. An assignee or new customer must obtain Company's

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written approval before any assignment shall occur. Member assumes the responsibility of ensuring a new customer or assignee is aware the new customer or assignee must obtain Company's written acceptance or the equipment must be removed or disabled to prevent future interconnection and/or operation.

19. **THIRD PARTIES:** This Agreement is intended solely for the benefit of the parties hereto. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any person not a party of this Agreement.
20. **GOVERNING LAW:** This Agreement shall be governed under laws of the State of North Carolina.
21. **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, such portion or provision shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.
22. **WAIVER:** No delay or omission in the exercise of any right under this Agreement shall impair any such right or shall be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. In the event that any agreement or covenant herein shall be breached and thereafter waived, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.
23. **CUSTOMER CERTIFICATION:** By signing this Agreement below, Member hereby certifies that, to the best of Member's knowledge, all of the information provided to the Company in connection with electric service, interconnection and/or sale pursuant to this Agreement is true and correct, and that Member has received and reviewed this Agreement.
24. **ACCEPTANCE AND SIGNATURES:** Upon the acceptance hereof by Company, evidenced by the signature of its authorized representative appearing below, this document shall be an Agreement for the interconnection of Member's Generator to Company's system.

Witness as to Member:

(Member) _____

By: _____
[Name]

Title: _____

Date: _____

Accepted:

Brunswick Electric Membership Corporation _____

By: _____
[Name]

Title: _____

Date: _____

Appendix A

List of Applicable Standards

1. IEEE 929 – Recommended Practice for Utility Interface of Photovoltaic (PV) Systems, latest published edition)
2. IEEE 1547 – Standard for Interconnecting Distributed Resources with Electric Power Systems, latest published edition
3. IEEE 1547.1 –2005 Standard Conformance Test Procedures for Interconnection Distributed Energy Resources with Electric Power Systems
4. IEEE P1547.3 Draft: Guide for Monitoring, Information Exchange, and Control of Distributed Resources Interconnected with Electric Power Systems
5. UL 1741 – Inverters, Converters and Controllers for use in Independent Power Systems, latest published edition
6. NFPA 70 – National Electrical Code, latest published edition

ATTACHMENT D



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

Certification Codes and Standards

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 E



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

**Engineering Submittal for
The Interconnection of
Generation Facility**



ENGINEERING DATA SUBMITTAL For the Interconnection of Generation Facility

WHO SHOULD FILE THIS SUBMITTAL: Anyone in the final stages of interconnecting a Generation Facility with Brunswick Electric Membership Corporation (BEMC). This submittal must be completed and provided to BEMC’s Interconnection Coordinator during the design of the Generation Facility, as established in BEMC’s “Interconnection Process for Generation Facility Flow Diagram Summary”.

INFORMATION: This submittal is used to document the interconnected Generation Facility. The Applicant’s Engineer (if applicable) should complete as much of the form as applicable and the Applicant shall sign and return the form to BEMC. The Applicant will be contacted if additional information is required.

CUSTOMER/APPLICANT (required)		
Company / Applicant’s Name:		
Representative:	Phone Number:	FAX Number:
Title:		
Mailing Address:		
City:	State:	Zip code:
Email Address:		

If an Application for Interconnection has already been filled out, continue and continue to page 2.

PROPOSED LOCATION OF GENERATION SYSTEM		
Street Address, legal description or GPS coordinates:		
PROJECT DESIGN / ENGINEERING (if applicable)		
Company:		
Representative:	Phone Number:	FAX Number:
Mailing Address:		
City:	State:	Zip code:
Email Address:		
ELECTRICAL CONTRACTOR (if applicable)		
Company:		
Representative:	Phone Number:	FAX Number:
Mailing Address:		
City:	State:	Zip code:
Email Address:		
TYPE OF INTERCONNECTED OPERATION (check all that apply)		

Interconnection / Transfer method:	
<input type="checkbox"/> Open <input type="checkbox"/> Closed <input type="checkbox"/> Soft Loading <input type="checkbox"/> Extended Parallel <input type="checkbox"/> Inverter	
Proposed use of generation: (Check all that may apply)	Duration Parallel:
<input type="checkbox"/> Peak Reduction <input type="checkbox"/> Standby <input type="checkbox"/> Energy Export Sales <input type="checkbox"/> Cover Load	<input type="checkbox"/> None <input type="checkbox"/> Limited <input type="checkbox"/> Continuous

GENERATION SYSTEM OPERATING INFORMATION	
Fuel Capacity (gals):	Full Fuel Run-time (hrs):
Engine Cool Down Duration (minutes):	Start Time Delay on Load Shed signal:
Start Time Delay on Outage:	

GENERATION SYSTEM OPERATION / MAINTENANCE CONTACT INFORMATION		
Maintenance Provider:	Phone #:	Pager #:
Operator Name:	Phone #:	Pager #:
Person to Contact before remote starting of units:		
Contact Name:	Phone #:	Pager #:
	24hr Phone #:	

REQUESTED CONSTRUCTION START/COMPLETION DATES	
Design Completion:	
Construction Start Date:	
Footings in Place:	
Primary Wiring Completion:	
Control Wire Completion:	
Start Acceptance Testing:	
Generation Operational (in-service):	

RELAY INFORMATION (Please include pickup setting and time delay for each protective element)			
Relay Type:		Relay Model No.	
CT Ratio:		VT Ratio:	
Under-voltage (27):		Reverse Power (32R):	
Over-current (50/51):		Lockout Relay (86) trips..:	
Over-voltage (59):		Synch Check Relay (25):	
Under-frequency (81U):		Parallel Limit Timer (62PL):	
Over-frequency (81O):		Shunt trip breaker (gen, utility)?	

PRIME MOVER (Complete all applicable items)			
Unit Number:		Type:	
Manufacturer:			
Serial Number:		Date of Manufacture:	
H.P. Rated:	H.P. Max:	Inertia Constant:	lb.-ft. ²
Energy Source (hydro, steam, wind, wind etc.):			

SYNCHRONOUS GENERATOR (if applicable)			
Unit Number:		Total number of units with listed specifications on site:	
Manufacturer:		Type:	Phases: 1 or 3
Serial Number (each)		Date of manufacture:	Speed (RPM): Freq. (Hz);
Rated Output (each unit) kW Standby:		kW Prime:	kVA:
Rated Power Factor (%):		Rated Voltage(Volts):	Rated Current (Amperes):
Field Voltage (Volts):		Field Current (Amperes):	Motoring Power (kW):
Synchronous Reactance (Xd):		% on	kVA base
Transient Reactance (X'd):		% on	kVA base
Subtransient Reactance (X''d):		% on	kVA base
Negative Sequence Reactance (X ₂):		% on	kVA base
Zero Sequence Reactance (X ₀):		% on	kVA base
Neutral Grounding Resistor (if applicable):			
I ² t or K (heating time constant):			
Exciter data:			
Governor data:			
Additional Information:			

TRANSFER SWITCH (If applicable)			
Number of Transfer Switches Planned: _____		Amperage of Switchgear & Transfer Switches	
1. Transfer Switch Mfg. _____	Model _____	Switchgear _____	Transfer Switch _____
2. Transfer Switch Mfg. _____	Model _____	Switchgear _____	Transfer Switch _____
3. Transfer Switch Mfg. _____	Model _____	Switchgear _____	Transfer Switch _____
4. Transfer Switch Mfg. _____	Model _____	Switchgear _____	Transfer Switch _____
5. Transfer Switch Mfg. _____	Model _____	Switchgear _____	Transfer Switch _____

INDUCTION GENERATOR (if applicable)	
Rotor Resistance (R_r): _____ Ohms	Stator Resistance (R_s): _____ Ohms
Rotor Reactance (X_r): _____ Ohms	Stator Reactance (X_s): _____ Ohms
Magnetizing Reactance (X_m): _____ Ohms	Short Circuit Reactance (X_d''): _____ Ohms
Design Letter:	Frame Size:
Exciting Current:	Temp Rise (deg C°):
Rated Output (kW):	
Reactive Power Required:	kVAr (no Load): kVAr (full load):
If this is a wound-rotor machine, describe any external equipment to be connected (resistor, rheostat, power converter, etc.) to rotor circuit, and circuit configuration. Describe ability, if any, to adjust generator reactive output to provide power system voltage regulation.	
Additional Information:	

INTERCONNECTION (STEP-UP) TRANSFORMER (If applicable)			
Manufacturer:		kVA:	
Date of Manufacture:	Serial Number:		
High Voltage: kV	Connection: delta wye	Neutral solidly grounded?	
Low Voltage: kV	Connection: delta wye	Neutral solidly grounded?	
Transformer Impedance (Z):		% on	kVA base
Transformer Resistance (R):		% on	kVA base
Transformer Reactance (X):		% on	kVA base
Neutral Grounding Resistor (if applicable):			

INVERTER (If applicable)		
Manufacturer:	Model:	
Rated Power Factor (%):	Rated Voltage (Volts):	Rated Current (Amperes):
Inverter Type (ferroresonant, step, pulse-width modulation, etc.):		
Type of Commutation: forced line	Minimum Short Circuit Ratio required:	
Minimum voltage for successful commutation:		
Current Harmonic Distortion	Maximum Individual Harmonic (%): Maximum Total Harmonic Distortion (%):	
Voltage Harmonic Distortion	Maximum Individual Harmonic (%): Maximum Total Harmonic Distortion (%):	
Describe capability, if any, to adjust reactive output to provide voltage regulation:		
NOTE: Attach all available calculations, test reports, and oscillographic prints showing inverter output voltage and current waveforms.		

POWER CIRCUIT BREAKER (if applicable)					
Manufacturer:			Model:		
Rated Voltage (kilovolts):			Rated Ampacity (Amperes):		
Interrupting Rating (Amperes):			BIL Rating:		
Interrupting Medium (vacuum, oil, gas, etc.)			Insulating Medium (vacuum, oil, gas, etc.)		
Control Voltage (Closing):		(Volts)	AC	DC	
Control Voltage (Tripping):		(Volts)	AC	DC	BatteryCharged Capacitor
Close Energy (circle one):	Spring	Motor	Hydraulic	Pneumatic	Other
Trip Energy (circle one):	Spring	Motor	Hydraulic	Pneumatic	Other
Bushing Current Transformers (Max. ratio):			Relay Accuracy Class:		
CT'S Multi Ratio? (circle one); No / Yes: (Available taps):					

MISCELLANEOUS (Use this area and any additional sheets for applicable notes and comments)

SIGN OFF AREA	
<p>This Engineering Data Submittal documents the equipment and design of the Generation Facility. We agree to supply BEMC with an updated Engineering Data Submittal any time significant changes are made in the equipment used or the design of the proposed Generation Facility. The Applicant agrees the Generation Facility will be designed, operated and maintained within the requirements set forth by BEMC.</p>	
_____	_____
Applicant Name (printed)	Representing/Company or Business
_____	_____
Applicant Signature	Date

ATTACHMENT F



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

**Feasibility Study
Agreement for
Brunswick Electric
Membership Corporation**



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 Customer,”) and Brunswick Electric Membership Corporation, an electric cooperative existing under the laws of the State of North Carolina, (“Company”). The Interconnection Customer and the Company each may be referred to as a “Party, ” or collectively as the “Parties.”

RECITALS

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

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the Company’s System; and

WHEREAS, the Interconnection Customer has requested the Company to perform a Feasibility Study to assess the feasibility of interconnecting the proposed Generating Facility with the Company’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 of the Company’s “Interconnection Process for Generation Facility” document.
- 2.0 The Interconnection Customer elects and the Company 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 Customer in the Interconnection Request, as may be modified as the result of the information sharing meeting. The Company reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Prudent Utility Practice during the course of the feasibility study. If the Interconnection Customer modifies its Interconnection Request, the time to complete the feasibility study may be extended.

- 5.0 In performing the Study, the Company shall rely, to the extent reasonably practicable, on existing studies of recent vintage. The Interconnection Customer shall not be charged for such existing studies; however, the Interconnection Customer 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 Customer 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 Customer and at the Interconnection Customer's cost.
- 9.0 A deposit of at least 50 percent of estimated cost of the Feasibility Study shall be required from the Interconnection Customer prior to the start of the Study.
- 10.0 Once the Feasibility Study is completed, a Feasibility Study report shall be prepared and transmitted to the Interconnection Customer. Barring unusual circumstances, the Feasibility Study will typically be completed and the Feasibility Study report transmitted within 30 business days of the Interconnection Customer's agreement to conduct a Feasibility Study.
- 11.0 Any Study fees will be based on the Company's actual costs and will be invoiced to the Interconnection Customer after the Study is completed and delivered.
- 12.0 The Interconnection Customer 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 Company 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 Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Company. 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 Company be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer 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.

Brunswick Electric Membership Corporation

Signed _____

Name (Printed): _____

Title _____

Date _____

Signed _____

Name (Printed): _____

Title _____

Date _____

**Feasibility Study Agreement
Appendix A**

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 information sharing meeting held on _____:

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

2) Designation of alternative Points of Interconnection and configuration.

Items 1) and 2) are to be completed by the Interconnection Customer. Other assumptions (listed below) are to be provided by the Interconnection Customer and the Company.

ATTACHMENT G



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

**System Impact Study
Agreement for
Brunswick Electric
Membership Corporation**



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 Customer,”) and Brunswick Electric Membership Corporation, an electric cooperative existing under the laws of the State of North Carolina, (“Company”). The Interconnection Customer and the Company each may be referred to as a “Party, ” or collectively as the “Parties.”

RECITALS

WHEREAS, the Interconnection Customer 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 Customer on _____; and

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the Company’s System; and

WHEREAS, the Company has either completed a Feasibility Study and provided the results of said study to the Interconnection Customer or agreed to forego the Feasibility Study; and

WHEREAS, the Interconnection Customer has requested the Company to perform a System Impact Study to assess the impact of interconnecting the Generating Facility with the Company’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 of the Company’s “Interconnection Process for Generation Facility” document.
- 2.0 The Interconnection Customer elects and the Company 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 Customer in the Interconnection Request. The Company reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Prudent Utility Practices during

the course of the System Impact Study. If the Interconnection Customer 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 Company 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 Company'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 Company's electric system.
- 9.0 A Distribution System Impact Study, if required, shall be completed and the results transmitted to the Interconnection Customer 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 Customer, 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 Customer.
- 11.0 Any study fees shall be based on the Company's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered.

12.0 The Interconnection Customer 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 Company 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 Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Company. 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 Company be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer 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.

Brunswick Electric Membership Corporation

Signed _____

Name (Printed): _____

Title _____

Date _____

Signed _____

Name (Printed): _____

Title _____

Date _____

ATTACHMENT H



BRUNSWICK ELECTRIC
MEMBERSHIP CORPORATION

**Facilities Study
Agreement for
Brunswick Electric
Membership Corporation**



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 Customer,”) and Brunswick Electric Membership Corporation, an electric cooperative existing under the laws of the State of North Carolina, (“Company”). The Interconnection Customer and the Company each may be referred to as a “Party, ” or collectively as the “Parties.”

RECITALS

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

WHEREAS, the Interconnection Customer desires to interconnect the Generating Facility with the Company’s System; and

WHEREAS, the Company has completed a System Impact Study and provided the results of said study to the Interconnection Customer (this recital to be omitted if the Parties have agreed to forego the Feasibility Study); and

WHEREAS, the Interconnection Customer has requested the Company 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 Company’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 of the Company’s “Interconnection Processes and Procedures for Generation Facility” document.
- 2.0 The Interconnection Customer elects and the Company shall cause to be performed a Facilities Study consistent with the Interconnection Processes and 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 Company'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 Company may propose to group facilities required for more than one Interconnection Customer in order to minimize facilities costs through economies of scale, but any Interconnection Customer 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 Customer.
- 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 Customer.
- 9.0 Any study fees shall be based on the Company's actual costs and will be invoiced to the Interconnection Customer after the study is completed and delivered.
- 10.0 The Interconnection Customer 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 Company 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 Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Company. 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 Company be liable for the actions or inactions of the Interconnection Customer or its subcontractors with respect to obligations of the Interconnection Customer 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.
- 18.2. The obligations under this article will not be limited in any way by any limitation of subcontractor's insurance.

19.0 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.

Brunswick Electric Membership Corporation

Signed _____

Name (Printed): _____

Title _____

Date _____

Signed _____

Name (Printed): _____

Title _____

Date _____

**Facilities Study Agreement
Appendix A**

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 Company 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: _____

Appendix A
List of Applicable Standards

1. IEEE 929 – Recommended Practice for Utility Interface of Photovoltaic (PV) Systems, latest published edition)
2. IEEE 1547 – Standard for Interconnecting Distributed Resources with Electric Power Systems, latest published edition
3. IEEE 1547.1 –2005 Standard Conformance Test Procedures for Interconnection Distributed Energy Resources with Electric Power Systems
4. IEEE P1547.3 Draft: Guide for Monitoring, Information Exchange, and Control of Distributed Resources Interconnected with Electric Power Systems
5. UL 1741 – Inverters, Converters and Controllers for use in Independent Power Systems, latest published edition
6. NFPA 70 – National Electrical Code, latest published edition