

EASTERN ILLINI ELECTRIC COOPERATIVE

REGULATION NO. 27

SUBJECT: Interconnection and Parallel Operation of Distribution Generation

OBJECTIVE:

To establish safety, reliability and economic standards for interconnection and parallel operation of distributed generation that encourage the development of Member-owned on-site electric generation facilities using renewable energy sources designed primarily to offset the Member's electrical requirements while honoring the Cooperative's obligation to provide electricity to all Members on a cooperative basis.

DEFINITIONS:

"Cooperative" means Eastern Illini Electric Cooperative, Inc. (Cooperative) owning and operating the power lines delivering electrical power and energy to the premises of its members within its geographic service territory.

Member means a Member of the Cooperative that chooses to own, interconnect, and operate a Distributed Generation (DG) facility in the Cooperative's service territory.

"Requestor" means the Member making an Interconnection Request.

Distributed Generation (DG): Any generation built within close proximity to the generating Member's load regardless of generation capacity or energy source of such generation and includes, but is not limited to, the following:

- A. Small-scale environmentally friendly generators such as photovoltaic (PV), fuel cells, small wind turbines.
- B. Micro-turbines or reciprocating engines fueled by renewable fuels such as landfill gas or methane gas from digesters.
- C. Any Qualifying Facility (QF) under the Public Utility Regulatory Policies Act of 1978 (PURPA).
- D. Any on-site generation with less than 10 MW of capacity interconnected with distribution facilities.

Qualifying Facility (QF) means a cogeneration facility or a small power production facility that meets all of the requirements for qualification set forth in PURPA and that has not had its qualifying status revoked by FERC. For the purpose of this regulation, a QF is governed by the Prairie Power, Inc. Policy 509, consistent with the Waiver approved by the Federal Energy Regulatory Commission (FERC) and PURPA.

Eligible Renewable Electrical Generating Facility (EREGF) means a generator powered by solar electric energy, wind, dedicated crops grown for electricity generation, anaerobic digestion of livestock or food processing waste, fuel cells or micro turbines powered by renewable fuels, or hydroelectric energy.

Small Distributed Generation Facility (Small DG) means one or more electricity production resources owned by an Eligible Cooperative Member which meets all of the following criteria: (1) such resources produce electric energy using biomass, waste, and renewable resources including wind, solar and water, and (2) the total combined Nameplate Rating for such resources at the single specified service metering point is less than or equal to 100 kilowatts (AC) and sized to offset no more than 110% of the Member's energy requirements over the previous 12 months (if 12 months of data is not available, the average amount of energy may be reasonably estimated by the Cooperative).

Nameplate capacity: means the maximum electric energy production capability of a generator, specified in kilowatts, as stated on the generator device placard(s), nameplate(s), or in the manufacturer's specifications.

ANSI Standard C84.1: American National Standards Institute (ANSI) Standard C84.1 (2011) for "Electric Power Systems and Equipment – Voltage Ratings (60 Hz)", as amended and supplemented, at the time the interconnection request is submitted.

IEEE Standard 1547: The Institute of Electrical and Electronic Engineers, Inc. (IEEE) Standard 1547 (2003) "Standard for Interconnecting Distributed Resources with Electric Power Systems", as amended and supplemented, at the time the interconnection request is submitted.

IEEE Standard 1547.1: The IEEE Standard 1547.1 (2005) "Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems", as amended and supplemented, at the time the interconnection request is submitted.

UL Standard 1741: Underwriters Laboratories' standard titled "Inverters, Converters, and Controllers for Use in Independent Power Systems", November 7, 2005 edition, as amended and supplemented.

Witness test: For lab certified or field approved equipment, verification (either by an on-site observation or review of documents) by the Cooperative that the interconnection installation evaluation required by IEEE Standard 1547 Section 5.3 and the commissioning test required by IEEE Standard 1547 Section 5.4 have been adequately performed. For interconnection equipment that has not been lab certified or field approved, the witness test shall also include the verification by the Cooperative of the on-site design tests as required by IEEE Standard 1547 Section 5.1 and verification by the Cooperative of production tests required by IEEE Standard 1547 Section 5.2. All tests verified by the Cooperative are to be performed in accordance with the test procedures specified by IEEE Standard 1547.1.

Queue Date: the date and time corresponding to when the Cooperative deems an Interconnection Request complete and subsequently enters the queue for analysis.

REGULATION:

- I. This interconnection regulation applies to Cooperative members proposing to install and interconnect a DG system subject to the provisions of either Regulation No. 26 or Regulation No. 26A or Regulation No. 26B that:
 - A. Are not subject to the interconnection requirements of Midwest Independent System Operator (MISO).
 - B. Are designed to operate in parallel with the electric distribution system.
 - C. Meet all applicable electrical codes and standards.
- II. Processing Interconnection Requests
 - A. Members seeking to Interconnect distributed generation shall submit to the Cooperative an Interconnection Request. The Interconnection Request shall consist of an interconnection application (See Regulation No. 27A), a one-line drawing of the proposed system, a site plan for the proposed system, specification sheets for all equipment to be installed, a non-refundable application fee (subject to Regulation No. 21), a copy of the sales agreement for the system, the Renewable Energy Member Agreement, and for any systems classified as a Qualifying Facility, FERC Form 556.
 - B. The Cooperative shall review the Interconnection Request for completeness within 5 business days of receiving the Interconnection Request. After the Cooperative confirms that it is complete, the Interconnection Request shall be evaluated for accuracy.
 - C. Within 10 business days after confirmation that the Interconnection Request is complete, the Interconnection Request shall be evaluated for accuracy. The Cooperative shall analyze whether the Interconnection Request meets all applicable Cooperative regulations, bylaw provisions, and specifications, as well as all applicable electric code regulations. If there are any inaccuracies in the Interconnection Request, the Cooperative shall inform the Requestor. Once the inaccuracies are corrected and resubmitted to the Cooperative, the 10-day confirmation process shall restart. Once the Interconnection Request is approved for accuracy, the Interconnection Request shall be date and time stamped by the Cooperative to indicate placement into the queue. The Cooperative shall notify the Requestor of the queue placement.
 - D. Interconnection Requests shall be evaluated for their impact on the electrical system of the Cooperative in the order of the Queue Date. No installation shall be permitted that reduces reliability to other Members or causes voltage conditions on the system to be outside of the limits of ANSI C84.1 Range A. No installation shall be permitted that is expected to produce objectionable harmonics on the system. Any mitigation required to resolve harmonic, reliability, or voltage problems created by a Member-owned generator shall be completed and paid for by the Member.

- E. Within 10 business days after the Queue Date, the Cooperative shall perform the basic design evaluation of the Interconnection of the Distributed Generation regarding interaction with and effect upon the electrical system of the Cooperative.

If, during the basic design evaluation, the Cooperative determines that a detailed design evaluation is needed, then the Cooperative shall initiate a Detailed Engineering Study Agreement, in the form of Attachment B, with the Requestor. The Requestor must then submit a deposit with the Cooperative prior to proceeding with the study. The deposit amount is determined by the fee schedule in the Cooperative's Regulation No. 21.

Within 30 business days of receiving the detailed study deposit, the Cooperative shall determine and specify any enhancements to the electric system of the Cooperative necessary to accommodate the Interconnection.

- F. During the design evaluation phase, the Cooperative in its sole judgment, shall determine if there is a reasonable likelihood of material electrical impact to third-party utility electrical systems. If such an impact is determined to be likely, the Cooperative shall notify the Requestor of the Cooperative's obligation to inform the third-party utility, and the right of the third-party utility to require its own analysis of impacts. The Cooperative shall arrange for discussions with the third-party utility as required. The Requestor shall be responsible for all costs related to the third-party utility analysis, and shall be required to arrange for any applicable payments to the third-party utility. In the event a third-party utility analysis is necessary, the subsequent schedule as described in this Section IV, "F." through "T.", shall be adjusted day-for-day as it corresponds to the completion of the third-party utility analysis.
- G. Within 5 business days after completion of the design evaluation phase, the Cooperative shall inform the Requestor of any added electrical elements, improvements, enhancements, systems, or other consequential additions, changes, or operational restrictions to the Cooperative electrical system necessary to accommodate the Interconnection. A commensurate budgetary estimate shall be concurrently prepared by the Cooperative. The Cooperative shall inform the Requestor of such budgetary estimate and clearly state the Cooperative plans no further action at that time pending the execution of an Interconnection Construction Agreement.
- H.1 Within 5 business days after completion of the design evaluation phase; provided the Cooperative shall incur no costs associated with the Interconnection, the Requestor shall be notified whether the Interconnection Request has been approved by the Cooperative.
- H.2.a Within 15 business days after completion of the design evaluation; provided there are costs to be incurred by the Cooperative to facilitate the Interconnection, the Requestor shall execute an Interconnection Construction Agreement in the form of Attachment C and place on deposit with the Cooperative an amount equal to 115% of the budgetary cost estimated for the Interconnection. Upon completion of the Interconnection related work, any unused funds shall be remitted to the Requestor along with an accounting of the costs incurred. It shall be the responsibility of the Requestor to pay the full and total

cost of the Interconnection even if such amount is in excess of the deposit(s). As the Interconnection work progresses, if the actual costs are expected to exceed 115% of the full budgetary estimate on deposit with the Cooperative, the Cooperative shall request and the Requestor shall pay additional funds to be placed on deposit with the Cooperative. Failure by the Requestor to do so in the timeframe specified by the Cooperative may, based on the sole judgment of the Cooperative, result in the Cooperative temporarily ceasing all work on the Interconnection. Member's payment of Construction Costs shall be construed as aid to construction only, and the Member shall not acquire any ownership interest in the metering, wiring, safety devices, or other equipment installed by the Cooperative at the site.

- H.2.b Failure by the Requestor to place funds on deposit with the Cooperative in the timeframe specified plus an additional 30 days shall result in the Interconnection Request being cancelled and voided. Thereafter, a request to renew the cancelled Interconnection Request shall be treated a new Interconnection Request.
- H.2.c The third-party utility analysis may conclude that additional electrical elements, improvements, enhancements, systems, or other consequential third-party electric system additions, changes, or operational restrictions are necessary to accommodate the Interconnection. Arrangements with the third-party utility for payment of any related costs are the responsibility of the Requestor. The Cooperative shall coordinate activities between the Requestor and third-party utility, but expressly does not warrant the process or outcome thereof.
- H.2.d At the sole discretion for the Cooperative, it shall provide the Requestor with certain requirements and related specifications pertaining to the design and construction of the Interconnection as it pertains to the work required of the Requestor. Such specifications may include required electrical protection schemes, voltage coordination arrangements, or any other considerations in keeping with good utility practice including, but not limited to, IEEE Standard 1547-2003 - Standard for Interconnecting Distributed Resources with Electric Power Systems, IEEE Standard 1547.1a-2015 - IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems - Amendment 1 and UL 1741 Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources.
- H.2.e The Interconnection work on behalf of the Cooperative shall be completed within the normal and conventional work practices, hours, and priorities of the Cooperative. The Cooperative does not warrant a completion date.
- H.2.f The Cooperative shall notify the Requestor of completion of the Interconnection work undertaken by the Cooperative. Notice of completion is not an authorization for energization of the distributed generation or the Interconnection by the Requestor.
- H.2.g The Requestor shall formally notify the Cooperative of completion of the Interconnection work required of the Requestor and, at the Cooperative's sole discretion, may be asked to

provide a Certificate of Completion from a certified licensed electrician. The main electrical disconnect controlling the electrical interfacing of the distributed generation with the electrical system of the Cooperative shall remain open and locked.

H.2.h Provided a third-party utility required certain work to be done to facilitate the Interconnection, the Requestor is responsible for obtaining a Certificate of Completion from the third-party utility. The main electrical disconnect controlling the electric interfacing of the generation with the electrical system of the Cooperative shall remain opened and locked pending the receipt of the Certificate of Completion from the third-party utility.

- I. After and within 10 business days of all three of I.a, I.b, and I.c, the Cooperative at its sole discretion may inspect the work of the Requestor at the point of Interconnection:
 - a. The Cooperative notifying the Requestor of completion of any interconnection work undertaken by the Cooperative,
 - b. Requestor notifying the Cooperative that any third-party interconnection work is completed, and
 - c. Requestor notifying the Cooperative that the Distributed Generation (DG) system is installed and ready for interconnection.

Upon satisfaction of the Cooperative, the requestor shall execute an Agreement for Interconnection and parallel Operations of Distributed Generation in the form of Attachment D.

Failure for the Requestor to complete step I.c within 180 days of the Cooperative completing step I.a shall result in the Interconnection Request being cancelled and voided. Thereafter, a request to renew the cancelled Interconnection Request shall be treated a new Interconnection Request. Requests for extension beyond the 180 days may be granted at the sole discretion of the Cooperative.

- J. Subsequent to the execution of Attachment D, the Agreement for Interconnection and Parallel Operation of Distributed Generation, the Requestor shall provide the Cooperative with the phone number and address of a contact person(s) with knowledge of the Distributed Generation facility, its installation, the Interconnection, and having the authority to disconnect the facility at the request of the Cooperative in accordance with the provisions of the Agreement. Such person shall be referred to as the "Operator in Charge".
- K. Cooperative shall then issue the Requestor a formal Authorization to Energize in the form of Attachment E. Absent the Authorization to Energize, the main electrical disconnect controlling the electrical interfacing of the generation with the electrical system of the Cooperative shall remain open and locked.
- L. Any remuneration due either party as a direct result of the ongoing operations of the generation shall be as specified in the regulations of the Cooperative regarding

Interconnection of and Service to Qualifying Facilities under Public Utility Regulatory Policies Act (PURPA) (Cooperative Regulation No. 26A).

III. Indemnification

The Member shall indemnify the Cooperative, its directors, officers, representatives, agents, and employees against all loss, damage, expense and liability to any persons, including Member, for injury to or death of persons or injury to property, including, without limitation, consequential damages, interest, punitive damages, fees and charges due the Cooperative from the Member in accordance with both applicable rate tariffs for the provision of electric service and the Cooperative's regulations, attorney's fees, court costs and expenses, proximately caused by the construction, ownership, interconnection, operation, or maintenance of, or by failure of, any of such Members' works or facilities used in connection with the operation of the generating facility. The Member shall, upon the Cooperative's request, defend any suit asserting a claim covered by the agreement to indemnify.

IV. Miscellaneous Requirements

- A. The Cooperative shall have free and unencumbered access to the DG, Interconnection, associated equipment, and the Member's premises at all times for any reasonable purpose in connection with this regulation.
- B. The Member shall not energize the Cooperative's system during any period of electricity service interruption. The Member's equipment must contain a disconnect device to which the Cooperative has access and which the Cooperative can lock in an open position to disconnect, for safety reasons, the Member's electric generating facility from the Cooperative's electric delivery system.
- C. Electric generation facilities may be disconnected by the Cooperative from its system whenever, in the sole judgment of the Cooperative, such action is required by an emergency, for reasons of personal or public safety, or it is believed in the sole judgment of the Cooperative that the generation facility is causing an adverse impact on quality of electricity service. The Cooperative shall strive to provide reasonable notice to the Member prior to disconnection of the facility, if possible, but is not required to do so.
- D. The DG shall be subject to the Cooperative's requirements for maintaining voltage standards, the production of reactive power, phasing, and frequency.
- E. The Member(s) shall pay all costs of the Interconnection including, initial and future transmission, distribution, metering, service, and other facilities costs necessary to permit Parallel Operations with the Cooperative.
- F. Any auxiliary or reserve power service required by the Member(s) must be arranged in accordance with the terms of the Cooperative's applicable regulations and rates, as modified from time to time.

- G. The Cooperative shall have the right to inspect and approve all plans for parallel generation systems and the interconnection systems prior to initial operation or subsequent operation, following modifications.
- H. The Member(s) shall make any necessary changes or adjustments to the additional facilities being operated in parallel to eliminate interference on the Cooperative's distribution system.
- I. The Member(s) shall pay all fees and costs associated with the interconnection. A fee schedule is listed in the Cooperative's Regulation No. 21 - Rates and Fees, and shall include but not be limited to application, engineering design evaluations, and line extensions or distribution system improvements.
- J. In the event of a dispute, either party shall provide the other party with a written notice of dispute describing in detail the nature of the dispute. If the dispute has not been resolved within 14 calendar days after receipt of the notice, either party may request assistance from a reputable dispute resolution service for assistance in resolving the dispute. The service shall select an appropriate dispute resolution venue, (such mediation, settlement judge, early neutral evaluation, or technical expert) to assist the parties in resolving their dispute. Each party agrees to conduct all negotiations in good faith and shall be responsible for one-half of any costs paid to dispute resolution services utilized in the attempt to resolve the dispute. If neither party elects to seek assistance from a dispute resolution service, or if the attempted dispute resolution fails, then either party may exercise such rights and remedies it may have in equity or law consistent with the terms of this regulation.

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