

CENTRAL ELECTRIC COOPERATIVE, INC.

POLICY NUMBER 414

ALTERNATIVE ENERGY GENERATION

I. OBJECTIVE

- A. To establish criteria for serving members operating cogeneration and small power production facilities.

II. POLICY

It is the policy of Central Electric Cooperative, Inc. ("the Cooperative") to permit and encourage Alternative Energy System (AES)/Qualifying Facility (QF) Owners to operate cogeneration and small power production facilities and safely and reliably interconnect them with the Cooperative's electric distribution system. The term AES/QF shall be used throughout this document to define any form of generation that is not owned and operated by the Cooperative, and is interconnected to the Cooperative. Alternative Energy Systems are defined under Pennsylvania's Alternative Energy Portfolio Standards Act of 2004 (Act 213-2004). Qualifying Facilities (QF) are defined under the Public Utility Regulatory Policies Act of 1978 (PURPA). This policy will enable the AES/QF Owner to deliver total or excess energy into the Cooperative's distribution system. Compensation for such delivered energy shall be based on Allegheny Electric Cooperative's (Allegheny) avoided costs. The interconnection of an AES/QF and the Cooperative's distribution system is subject to the following conditions:

- A. If the AES/QF has nondiscriminatory access to one of the following: (1) independently administered, auction-based day ahead and real time energy markets and wholesale markets for long-term capacity sales, or (2) an open access transmission and interconnection service provided by a FERC- approved regional transmission organization and competitive wholesale markets that provide an opportunity to sell capacity and energy, then Allegheny's obligation to purchase the energy and capacity generated by a AES/QF may be waived by petitioning FERC for relief from the obligation to purchase energy and capacity on a service territory-wide basis by demonstrating that option (1) or (2) is available to the AES/QF.
- B. Prior to the time of interconnection, the AES/QF Owner must submit to the Cooperative complete and detailed electrical drawings, signed by a licensed Pennsylvania Professional Engineer of the AES/QF or, at the sole discretion of the Cooperative, other documentation of the installation, acceptable to the Cooperative. Such submittal shall be in sufficient detail to provide reasonable assurance that AES/QF complies with all Cooperative and Allegheny requirements. Any new or proposed AES/QF should be evaluated by the Cooperative to determine system impacts. The AES/QF Owner shall provide the Cooperative with appropriate documentation evidencing satisfactory level of completion when the unit is ready to

CENTRAL ELECTRIC COOPERATIVE, INC.

POLICY NUMBER 414 - CONT'D.

be energized. Written approval must be received from the Cooperative prior to the physical interconnection of the AES/QF to the Cooperative's electric system. The *SAFETY & INTERCONNECTION REQUIREMENTS FOR ALTERNATIVE ENERGY GENERATION* document, included as a supplement to this policy provides additional details regarding the evaluation of proposed generators.

The AES/QF Owner shall be responsible for payment of any incremental costs incurred by the Cooperative or Allegheny to interconnect with, synchronize, or accept output from the AES/QF. This would include, but not be limited to:

1. The costs associated with an engineering or evaluation study to accommodate the AES/QF interconnection.
2. Increase in transformer capacity and service conductor size or length.
3. Change or addition of type of service; e.g.
 - a. Single-phase to three-phase.
 - b. Voltage change (120/240 to 240/480, etc.).
 - c. Metering or disconnect devices
4. Line extension or system upgrade for a AES/QF.
 - a. Single-phase line extension to the facility
 - b. Three-phase line extension to the facility
 - c. Reconductoring a circuit to increase current carrying capability.
 - d. Changes to existing Cooperative protection schemes, including associated communications
 - e. Changes to existing Cooperative voltage regulating schemes, including associated communications.

All AES/QF wiring must be in compliance with the National Electrical Code (NEC) and all other applicable codes and ordinances, and must be approved by an electrical inspection agency acceptable to the Cooperative. Proper grounding is imperative in ensuring safe operation. The latest editions of NEC Article 250 and IEEE Green Book ANSI C114.1-1973 / IEEE 142-1972 should be referenced.

Any reference in this Policy to a code, standard, regulation, or guideline shall be construed to mean the then-current version of that document.

- C. The interconnection equipment must be of a "fail safe" design to ensure, in the event of any electric supply or equipment failure, that the AES/QF and the Cooperative's electric system will be physically separated automatically. To prevent islanding on specific AES/QF applications, a transfer trip scheme may be required. The AES/QF

CENTRAL ELECTRIC COOPERATIVE, INC.

POLICY NUMBER 414 - CONT'D.

will remain separated until the Cooperative's electric system returns to its normal operating status for a specified minimum amount of time. The AES/QF will synchronize with the Cooperative's electric system only when the Cooperative electric facilities' voltage and frequency are within acceptable industry tolerances. Adherence to IEEE 1547-2018 relaying guidelines is required.

The AES/QF electric system should be able to withstand all expected electric transients that occur on Cooperative's electric distribution and transmission systems, including outages. For instance, fuse coordination and operation of Cooperative reclosers, single-phase or three-phase, should not cause damage that would require repair of the AES/QF's electric system.

The AES/QF Owner shall have the sole responsibility for the safety and electrical protection of his/her AES/QF, without regard to the condition of the Cooperative's or Allegheny's facilities.

- D. The interconnection equipment must include an approved manual, load break safety switch lockable in the open position and be accessible at all times to the Cooperative's personnel. The cooperative may require that the disconnect switch provide a visible opening. The AES/QF Owner shall agree that the Cooperative may open the disconnect switch without prior notice for the following reasons:
1. Emergency conditions on the Cooperative's system.
 2. Inspection of the AES/QF by the Cooperative reveals a hazardous condition or lack of proper maintenance of AES/QF facilities.
 3. The AES/QF interferes with electric service to Cooperative Members or with the Cooperative's electric system. Interference may include, but not be limited to: over or under voltage or frequency, harmonics, etc.
 4. Repair work on the Cooperative's system. Where time permits, the Cooperative will attempt to provide advance notice to the AES/QF Owner of imminent disconnection of the AES/QF and the reasons for same.
- E. The AES/QF must be operated so that no adverse effect(s) or power quality issue(s) occur to the Cooperative's electric system or to others connected thereto. If such adverse effect(s) occur, the AES/QF Owner must discontinue operation of the AES/QF and take corrective action(s) at the AES/QF Owner's sole expense, as deemed necessary by the Cooperative, and/or industry standards, including IEEE 1547-2018, IEEE 929-2000, and UL1741-2010. Adverse effect(s) and power quality issues include, but are not limited to, voltage regulation, flicker, power factor and/or harmonics.

CENTRAL ELECTRIC COOPERATIVE, INC.

POLICY NUMBER 414 - CONT'D

- F. The AES/QF Owner must inform the Cooperative of any changes to the AES/QF and obtain the Cooperative's approval, in writing, before changes are made to the AES/QF in order to address the adverse effect(s) referred to in Paragraph D above. Prior to reconnecting, the AES/QF Owner must inform the Cooperative of their intent to reconnect.
- G. The AES/QF Owner will own, install, and maintain at his expense, all safety and interconnection equipment as specified by the Cooperative. Minimum required interconnection facilities are described in Section B hereto. The Cooperative reserves the right to observe and witness the installation and testing of interconnection facilities pursuant to industry practices, codes, and IEEE 1547-2018, IEEE 929-2000, and UL 1741 2010. Cooperative observation, review inspection, or testing shall not be considered either as an endorsement or confirmation of any aspect, feature, element, or condition of the AES/QF or associated interconnection equipment or the operation thereof, nor as a warranty as to the fitness, safety, desirability, or reliability of same. The inspection does not impose any obligation upon the Cooperative or Allegheny to warrant or ensure in any manner the AES/QF's safety or compliance with this Agreement. Further, the Cooperative and Allegheny made no representations concerning, and expressly disclaim any expertise or specialized knowledge relating to the particular type of generation employed by the Generator or equipment associated with such generation.
- H. The AES/QF must be installed to meet the most recent edition of the National Electrical Safety Code (NESC) or other applicable code requirements for clearances from the nearest Cooperative electric facility, or such other distance as the Cooperative deems necessary for safety or electric operation-related reasons.
- I. The Cooperative and/or Allegheny reserves the right to inspect the AES/QF, interconnection equipment and associated maintenance records at any time. Such inspections shall not relieve the AES/QF Owner from his/her obligation to operate and maintain the AES/QF in a safe and satisfactory manner.
- J. Consistent with the provisions of 7 CFR 1730 Subpart C, "Interconnection of Distributed Resources", the cooperative sets forth the following insurance requirements for AES/QF Owners.

The cooperative has determined that it has in effect appropriate liability insurance of its own covering the cooperative's operations, including interconnections. AES/QF Owners other than residential consumer-members must have a current liability insurance policy adequate in amount to cover all forms of liability that may arise from the operation of the AES/QF interconnected to the Cooperative's electric system, and the policy should list the Cooperative as an additional named insured.

CENTRAL ELECTRIC COOPERATIVE, INC.

POLICY NUMBER 414 - CONT'D

A copy of this policy must be on file with the Cooperative. Lapse of the policy must be automatically reported to the Cooperative by the insurer, and shall result in the immediate disconnection of the AES/QF from the Cooperative's electric system. In general, a minimum of \$1 Million in liability insurance is required, but a more specific amount can be based on the Cooperative's review of the specific AES/QF.

Due in part to 1) the prohibition by the Pennsylvania Public Utility Commission for utilities under its jurisdiction to require a distributed resource owner to provide liability insurance as a condition for obtaining an interconnection, 2) the belief by Commonwealth of Pennsylvania officials that an "insurance requirement" discourages the development of alternative energy resources, 3) the relative small size of residential distributed resources, and 4) the Cooperative desire to encourage the development of renewable resources consistent with state and federal goals, the Cooperative has determined that no additional liability insurance requirement for residential AES/QF installations of 100 kW or smaller is appropriate.

Additionally, residential consumer-members that are AES/QF Owners are encouraged to but are not required to maintain a current liability insurance policy adequate in amount to cover all forms of liability that may arise from the interconnection of the AES/QF interconnected to the Cooperative's electric system.

- K. The AES/QF Owner shall agree to hold the Cooperative and Allegheny harmless and indemnify them in connection with any damages or injury affecting any party resulting from the installation or the interconnection of the AES/QF to the Cooperative's or Allegheny's system, and the purchase of any output from the AES/QF, or operation of the AES/QF. The AES/QF agrees to indemnify the Cooperative and/or Allegheny for any monetary damage, liability, administrative, and/or legal expenses incurred by the Cooperative and/or Allegheny as a result of the failure of the AES/QF to meet any requirement or condition set forth herein.
- L. The AES/QF Owner shall sell its output to Allegheny, pursuant to PURPA or ACT 213-2004 (as applicable) requirements, or upon written notification to Allegheny, to another entity. If another power purchasing entity is selected, a transmission or other charge may apply to wheel or transport the electric power over the Cooperative's or Allegheny's electric facilities. The Cooperative will sell electric energy and capacity to the AES/QF at rates and upon terms and conditions as specified in the Cooperative's applicable rules, regulations, policies, and rate schedules.
- M. When requested by the AES, the Cooperative will provide "net metering" to the AES. To accomplish "net metering" the Cooperative will meter electric flow to and from the AES. The Cooperative will use electricity generated by the AES that exceeds the AES's own use and flows into the Cooperative's electric system to offset electricity

CENTRAL ELECTRIC COOPERATIVE, INC.

POLICY NUMBER 414 - CONT'D

supplied to the AES by the Cooperative for billing purposes. This offset for electricity that flows into the Cooperative's electric system shall not exceed the amount of electricity provided to the AES by the Cooperative during the calendar year.

The AES/QF is responsible to execute a contract with Allegheny to receive compensation for this excess energy and /or capacity delivered into the Cooperative's electric system during the annual period. Meter Aggregation is a billing mechanism that allows a member to credit kilowatt-hours (kWh) from the primary account which is the service location operating the AES to other electric accounts within a two-mile radius. If the primary account generates more than its monthly usage the excess will be distributed to the other aggregated accounts in a manner to be determined by the cooperative within the capabilities of their existing billing system.

- N. For AES/QF's of 150 kW or less, the AES/QF will be compensated at Allegheny's avoided cost rate.
- O. For AES/QF facilities of more than 150 kW, Allegheny will evaluate the proposed facility and negotiate potential purchase rates on a case-by-case basis, which rates will be based on Allegheny's avoided costs.
- P. Allegheny may refuse to purchase output from a AES/QF from time to time so the Cooperative can (1) construct, install, maintain, repair, replace, remove, investigate or inspect any of the Cooperative's equipment or any part of the Cooperative's System; or (2) if the Cooperative and/or Allegheny determine(s) that curtailment, interruption, or reduction of deliveries of energy or energy and capacity is appropriate because of emergencies, forced outages, operating conditions on the Cooperative's system, or as otherwise required by industry standard electrical practices.
- Q. Synchronous Generators will operate at a power factor required by the Cooperative.

III. RESPONSIBILITY

- A. The President of the Board and CEO & General Manager shall ensure that this policy is adhered to.

Board Action: December 18, 2006

Board Action: February 8, 2010

Board Action: June 20, 2011

Board Action: August 19, 2019

CENTRAL ELECTRIC COOPERATIVE, INC.

SUPPLEMENT TO POLICY ON ALTERNATIVE ENERGY GENERATION

SAFETY & INTERCONNECTION REQUIREMENTS FOR ALTERNATIVE ENERGY GENERATION

The CENTRAL ELECTRIC COOPERATIVE, INC., (“the Cooperative”) has developed the *POLICY ON ALTERNATIVE ENERGY GENERATION enabling* residential and commercial/industrial consumers to safely use electric power generated from non-traditional or renewable resources. Renewable resources, such as photovoltaics and fuel cells, may supplement the consumer’s source of energy.

AES/QF Owners, as defined in the CENTRAL ELECTRIC COOPERATIVE, INC., POLICY 414 ON ALTERNATIVE ENERGY GENERATION, can generate electricity for their own use, or for resale, within specific guidelines. AES/QF installations are generally a non-utility source of electric power that are connected to, and can supply power to, the cooperative-owned distribution or transmission system. The AES/QF can be non-consumer-owned, and can be powered either by renewable resources, or by non-renewable resources.

The Cooperative recognizes the various electric industry standards and safety codes as they pertain to Distributed Resources (DR) or Qualifying Facilities (QF). The standards and codes to be followed include, but are not limited to: Institute of Electronic and Electrical Engineers (IEEE), the Mid-Atlantic Distributed Resource Initiative (MADRI), PJM Interconnection, National Electric Safety Code (NESC), National Electric Code (NEC), National Fire Protection Association (NFPA), Underwriters Laboratories (UL), state, and local entities. Any reference in this Policy to a code, standard, regulation, or guideline shall be construed to mean the then-current version of that document.

At a minimum, the Cooperative requires the use of AES/QF equipment that meets the intent of the IEEE 1547-2018, and/ or IEEE 929-2000, and/ or UL 1741- 2010, and any other current industry standards.

GENERAL TECHNICAL REQUIREMENTS

Overview

The technical requirements for connection of AES/QF will be those necessary to assure the safety and integrity of the Cooperative's electric system, and to maintain the quality and reliability of service to the Cooperative's electric system or to others connected thereto. Should adverse effect(s) occur, the AES/QF Owner must discontinue operation and take corrective action.

Disconnecting Device

A lockable disconnecting device, installed at a Cooperative approved location is required. In addition to the foregoing, an appropriate control and protective scheme that automatically isolates the AES/QF from the utility system for, but not necessarily limited to, the following conditions:

- An electrical or mechanical fault on the AES/QF.
- An electrical or mechanical fault on the Cooperative's electrical system.
- An abnormal operating voltage and/or frequency on either system.
- A separation of the Cooperative's main system from the circuit that is interconnected with the AES/QF.

Thresholds for tripping and protective device clearing times shall be in accordance with IEEE 1547-2018. The reconnection of the AES/QF to the Cooperative distribution system shall not occur until normal system conditions are present as prescribed in IEEE 1547-2018 for minimum of five miles.

Installation

The AES/QF units are to be installed in a workmanlike manner. Minimum Interconnection requirements will include, but may not be limited to, meeting or exceeding IEEE 1547-2018 and/ or UL 1741 2010 functionality requirements. Facilities shall be installed to current NFPA 70- 2014 codes or applicable electrical/ building codes. Additional operational or equipment requirements may be imposed on the AES/QF depending on the point of connection on the Cooperative's electrical facilities and the impact of the AES/QF on the Cooperatives' system. The Cooperative reserves the right to observe Generator start-up testing procedures to verify the proper system AES/QF interaction, or testing after modifications have been made to the Member's system.

Related Information

Depending on the size of the AES/QF, guidelines established by the PJM Interconnection L.L.C. will need to be followed. The PJM website at www.pjm.com contains details on IEEE 1547-2018, and other interconnection information.

If the electrical output of the AES/QF will be transmitted over the electric system of another entity, the AES/QF may need to meet additional requirements of that entity.

Assumptions and Limitations

IEEE 1547-2018 is not all-encompassing in its coverage of AES/QF interconnections. Limitations and assumptions affecting its application include:

- The assumption that the AES/QF operates at 60 Hz.
- The assumption that the aggregate capacity of the AES/QF is 10 MVA or less at the point of common connection.
- The assumption that IEEE 1547-2018 is focused on the activities of an AES/QF on radial primary and secondary distribution systems.
- The limitation that IEEE 1547-2018 does not address the protection or operating requirements, planning, designing, or maintenance of the utility distribution system.

Monitoring Provisions / Other Communications / Control

Depending on the intended use and application of the AES/QF, monitoring provisions may be needed. Small units providing supplemental residential power likely will not need monitoring, whereas larger units generating power in excess of local use may require additional metering, or the use of an indicator sent either to the Cooperative or another entity controlling the electric system. The communication capabilities required to coordinate the AES/QF with protective or monitoring devices, may include but not be limited to, a Remote Terminal Unit (RTU), and shall be installed at the AES/QF Owners expense.

Net Metering will require the use of metering equipment, located between the Cooperative's source and the Owner's electrical load that will measure the flow of electricity from the Cooperative to the Owner. The metering will also measure the flow of electricity provided by the AES/QF Owner to the Cooperative. These independent meter registers will be used to determine the amount of energy provided to the Cooperative, and will be the basis for determining the net electricity to be billed to the AES/QF Owner or "banked" during a billing period.

SPECIFIC TECHNICAL REQUIREMENTS – PROTECTION

- A. Fault protection can be provided by various methods, but must be capable of detecting and clearing faults that can occur in AES/QF and/ or Cooperative facilities. Typical schemes are shown in, but are not limited to, Exhibit 1.
- B. Isolation protection is required to immediately and automatically disconnect AES/QF generation from the Cooperative system upon the loss of Cooperative power.

This protection generally can be accomplished by either a synchronous inverter used in DC generation or by applying the following isolation relays:

1. Undervoltage relay which may be time-delayed and instantaneous overvoltage relay.
2. Underfrequency relay where generators equal to or greater than 100 kW are utilized.

3. Overfrequency relay on certain installations. Goes

When the Cooperative or Allegheny determines that above relaying protection schemes are not adequate to immediately and automatically disconnect AES/QF generation from the Cooperative system upon the loss of Cooperative power, a Direct Transfer Trip scheme may be required to disconnect the AES/QF generation through the use of any protective device on the Cooperative system that would interrupt Cooperative power at the Point of Common Connection of the AES/QF.

Typical protection schemes are illustrated in Figures 1 through 5 of Exhibit 1 for AES/QF of 100 kW or less. Requirements for AES/QF of greater than 100 kW will be developed on a case by case basis.

- C. AES/QF fault protection must coordinate with Cooperative system protective devices for faults in AES/QF equipment. The Cooperative will provide the characteristics of the protective device that the AES/QF must coordinate with.

All required protection design and associated settings must be provided to and approved formally by the Cooperative prior to connecting AES/QF equipment to the Cooperative system. The following information must be supplied to the Cooperative:

1. One-line relay application diagram.
 2. Connection diagrams showing all external connections to individual components of the protective scheme.
 3. Instruction manuals for all protective components. Component specifications and internal wiring diagrams must be provided if not included in manuals.
 4. Generator data - equivalent impedances, time constants, etc. required to analyze fault contributions and load current flows.
 5. All protective equipment ratings.
 6. All protective relay settings.
- D. All relay settings for isolation protection must be coordinated with Cooperative equipment.
- E. Utility grade relays are required for AES/QF interconnections with total aggregate generation capacity greater than 500kW.
- F. All relays must be equipped with targets or other visible indicators to indicate that the relay has operated.
- G. If the protective system uses AC power as the control voltage, it must be designed to disconnect the generation from the Cooperative system if the AC control power is lost.
- H. The tripping control of any installed circuit interrupting device shall be powered by a battery or stored energy device to permit operation upon loss of the Cooperative system connection.

- I. All relaying must be connected into instrument transformers. The Cooperative has the following requirements related to instrument transformers:
1. All current connections shall be connected into current transformers (CTs). All CTs shall be rated to provide more than five amperes secondary current for all normal loading conditions and must be designed for relaying use with an accuracy class of at least C50. For three-phase systems, all three phases must be equipped with CTs.
 2. Except where relay has the capability to accept the available voltage input without the use of an instrument transformer, all potential connections must be connected into voltage transformers (VTs). For single-phase connections, the VTs shall be provided such that the secondary voltage does not exceed 120 volts for normal operations. For three-phase connections, the VTs shall be provided such that the line-to-line voltage does not exceed 120 volts for normal operation.
- J. Maintenance for required fault and isolation protection must be performed and documented by the AES/QF Owner at specified intervals and specifications established by the equipment manufacturer or at intervals otherwise acceptable to the Cooperative.
- K. A lockable, manually operable, visible load-break disconnecting device is required for all AES/QF interconnections. The device will be installed at a Cooperative-approved and accessible location and must be labeled as required by the Cooperative to inform Cooperative personnel of the presence of generation. For three-phase applications, this device must be gang operated. In all cases, the disconnecting device shall not open the neutral when it is opened.
- L. The AES/QF will contain or employ a disconnecting device to automatically isolate the AES/QF generation from the Cooperative system when the Cooperative's circuit is either partially energized or fully de-energized. The disconnecting device also must be blocked from closing in on a partially energized or a de-energized Cooperative circuit.
- M. The Cooperative has the right, as required, to inspect all required protective equipment associated with the AES/QF interconnection.
- N. The AES/QF is responsible for properly synchronizing his generation with the Cooperative system according to provisions included in the IEEE 1547-2018 or other industry standards.
- O. The AES/QF is responsible for providing a phase protection device on three-phase generators that will prevent damage to the generator or the Cooperative's system or Cooperative Members' equipment due to the loss of energy in any phase of a poly-phase system.
- P. The AES/QF qualifying Facility's electrical system should be able to withstand any and all electrical transients that occur on Cooperative's electrical distribution and transmission systems, including but not limited to, voltage surges, sags, swells, and outages. For instance, fuse coordination and operation of Cooperative reclosers, single-phase or three-phase, should not cause damage which would require repair of the

QAES/QF Qualifying Facility's electrical system. Manual or automatic reset of system protective devices, either by the Cooperative or the AES/QF Owner, is acceptable.

- Q. It is acknowledged that AES/QF technologies continue to evolve. While the latest industry standard may not be specifically listed in this document, the Cooperative expressly reserves the right to use the latest industry standards in the interconnection evaluation process for any AES/QF technology.
- R. Additional resources on protection systems:
- ANSI/IEEE 1001-1988 "IEEE Guide for Interfacing Dispersed Storage and Generation Facilities with Electric Power Systems."
 - PJM Manual 14A: Generation and Transmission Interconnection Process.
 - NFPA 70-2014 National Electric Code. *Note: Attention is directed to Article 250 – Grounding and Bonding.*
 - IEEE Green Book – ANSI C114.1-1973/IEEE 142-1972 "IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems."
 - IEEE Orange Book – ANSI/IEEE 446-1980 "IEEE Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Applications."

SPECIFIC TECHNICAL REQUIREMENTS- GROUNDING

- A. The AES/QF electrical system shall be grounded in accordance with all applicable codes.
- B. Grounding of sufficient size to handle the maximum available ground fault current shall be designed and installed
- C. The interconnection of the AES/QF electrical system with the Cooperative system shall be compatible with grounding methods in use on the Cooperative system.
- D. The maximum un-faulted phase (line-to-ground) voltages on the Cooperative system during single line-to-ground fault conditions with the AES/QF connected shall be greater than those voltages which would occur without the AES/QF connected. If the preceding condition cannot be met, in addition to others protection requirements specified in this document, overvoltage protection shall be required to detect a situation where a device has operated on the Cooperative system due to a phase-to-ground fault and to initiated high speed disconnection of the AES/QF generation from the Cooperative system.

PROJECT REVIEW

Additionally, to ensure that other Cooperative Members' electric service is not negatively affected by one (or more) operating AES/QF units, the Cooperative will perform a technical review of the AES/QF unit. The review process should reveal potential problems prior to

the operation of the AES/QF, as well as provide a cost estimate for the necessary work to accept AES/QF generation. The cost of any studies associated with the proposed installation of an AES/QF shall be borne by the AES/QF Owner.

The Cooperative, however, reserves the right to reevaluate the continued operation of the AES/QF if any unforeseen safety, quality, or reliability issues occur. Any corrective actions recommended by the Cooperative or its agent must be implemented at the AES/QF Owner's expense. This may include termination of the operation of one or more AES/QF units interconnected on the same line section.

RESPONSIBILITY

It shall be the responsibility of the AES/QF Owner to design and operate a system adequate to meet the technical requirements generally set forth above and to assure reliability of the protection scheme as predicated by the design and location of Member generation. In addition, this protection must be compatible with Cooperative system protective devices. Paralleling Member generation with the Cooperative system will be permitted only upon obtaining formal Cooperative approval in advance.

The AES/QF Owner is solely responsible for providing adequate protection for his equipment.

Revised 2-8-2010

Revised 12-17-2019

EXHIBIT 1

GENERAL PROTECTION REQUIREMENTS

Figure

- 1 Protection for a three-phase synchronous generator
- 2 Protection for a single-phase induction generator
- 3 Protection for a three-phase induction generator
- 4 Protection for a single-phase inverter
- 5 Protection for a three-phase inverter

CENTRAL ELECTRIC COOPERATIVE, INC.

NET METERING RATE RIDER
FOR
MEMBER ALTERNATIVE ENERGY GENERATION

AVAILABILITY

This rate rider is available to all members of the Cooperative, subject to the policies, rules and regulations of the Cooperative. The aggregate capacity of members' alternative energy systems (AES) may be limited by the Cooperative's electric system, substation area and/or circuit.

APPLICABILITY

This rate rider is applicable to all members of the Cooperative. The member's AES must: (1) be owned, operated, leased, or otherwise controlled by the member; (2) be operated in parallel with the Cooperative's distribution system; (3) have a nameplate capacity no greater than 25 kilowatts (kW) for residential service which includes the seasonal rate classification and up to 150 kilowatts (kW) for all other rate classes; and (4) be primarily intended to offset part or all of a member's electric generation requirements.

Member AES's that qualify under this Rate Rider are: solar photovoltaic or other solar energy, solar thermal energy, wind power, hydropower, biomass, and bio-digester gas and fuel cells as defined in Pa. Act 213 (Alternative Energy Portfolio Standards Act of 2004).

The member's AES must meet or exceed the standards and requirements of the National Electrical Code, the National Electrical Safety Code, the Institute of Electrical and Electronics Engineers, Underwriters Laboratories, and Pennsylvania Public Utility Commission, as well as the Cooperative's Policy on Alternative Energy Production; Safety and Interconnection Requirements for Alternative Energy Production; and local requirements.

The member must have executed a Power Purchase Contract with Allegheny Electric Cooperative (Allegheny) to sell excess energy produced by the member's AES to Allegheny.

TYPE OF SERVICE

60 cycles, at available secondary voltage.

Service under this rate schedule requires metering equipment that can measure the flow of electricity in both directions.

COOPERATIVE MONTHLY BILLING

The Cooperative will bill the member on a monthly basis according to the applicable rate schedule. In conjunction with the applicable rate schedule, the Cooperative shall provide "net metering" to the qualifying AES. To accomplish "net metering" the Cooperative will meter electric flow to and from the AES. For billing purposes the Cooperative will use electricity generated by the AES that exceeds the AES's own use and flows into the Cooperative's electric system to offset electricity supplied to the AES by the Cooperative. The AES will be billed for the net kWh's used according

to the applicable rate schedule. This offset for kWh's that flow into the Cooperative's electric system shall be limited to the number of kWh provided to the AES by the Cooperative during the calendar year. When the amount of electricity supplied by the AES into the Cooperative's electric system exceeds the amount of electricity supplied by the Cooperative to the AES during the billing period, the excess will be "banked" for offset in a future billing period. At the end of the calendar year the Cooperative will submit documentation to Allegheny for any AES that has delivered excess energy and/or capacity into the Cooperative's electric system. The AES will receive compensation for the remaining kWh in their "bank" directly from Allegheny at the avoided cost per kWh.

The AES/QF is responsible to execute a contract with Allegheny to receive compensation for this excess energy and/or capacity delivered into the Cooperative's electric system during the calendar year.

METER AGGREGATION

Meter Aggregation is a billing mechanism that allows a member to credit kilowatt-hours (kWh) from the primary account which is the service location operating the AES to other electric accounts within a two-mile radius. If the primary account generates more than its monthly usage the excess will be distributed to the other aggregated accounts in a manner to be determined by the cooperative within the capabilities of their existing billing system.

TERMS OF PAYMENT

The monthly charges for service are net and are subject to the terms of payment included the rate schedule to which this rider is applied.

EFFECTIVE DATE

The rate rider shall be effective as of August 19, 2019. It shall be in effect until changed by the Cooperative and shall terminate if the Pennsylvania/New Jersey Rural Electric Cooperatives Renewable Energy Assistance Program (REAP) ends.