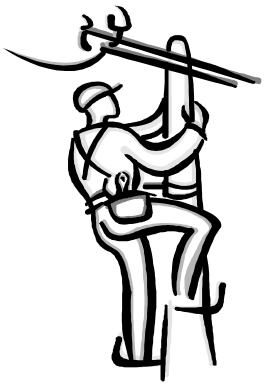


LIGHT AND POWER

Small Generator Interconnection Procedures

Lamar Light & Power

Summary of Interconnection Procedures

1. A customer considering installation of a small generation system (a potential qualifying facility) picks up an Application for Interconnection Packet from Lamar Light and Power (LL&P).
2. The potential qualifying facility submits the application to LL&P. If the facility's nameplate capacity is greater than 10kW, Qualifying Facility Design Data Requirements are also required.
3. LL&P evaluates the application for completeness and notifies the customer within ten business days of receipt if the application is complete. If an application is not complete, LL&P will advise the customer what material is missing.
4. Within 15 business days, LL&P conducts preliminary engineering studies to determine the effect the Potential Qualifying Facility might have on existing LL&P customers and equipment.
5. Provided all criteria in the Interconnection Standards for Cogenerators and Small Power Producers are met, unless LL&P determines that the small generation facility cannot be connected safely and reliably, LL&P executes the Application and returns it to the customer.
6. The customer provides a certificate of insurance (documentation that the customer has been approved for the required insurance coverage). Any customer considering a small cogeneration system should investigate the cost and available of insurance early in the planning process to assure that the insurance will be available at a cost-effective rate.
7. LL&P designs and constructs the interconnection and modifies the existing LL&P network as necessary to accept the small generation facility.
8. After installation of the small generating system, the customer returns the Certificate of Completion to LL&P along with documentation that the installation has passed an inspection conducted by a State of Colorado Electrical Inspector. LL&P will then inspect the qualifying Facility for compliance with standards within ten business days of (1) the receipt of the Certificate of Completion, and (2) the receipt of documentation of a successful State of Colorado Electrical Inspection. LL&P will inspect the facility for compliance with standards and may schedule appropriate metering replacement, if necessary.
9. LL&P notifies the customer that interconnection of the Qualifying Facility is authorized. If the witness test is not satisfactory, LL&P has the right to disconnect the Qualifying Facility. The customer has no right to operate in parallel until a witness test has been performed.
10. Upon receipt of the Certificate of Completion, documentation of the required insurance coverage, and successful completion of the LL&P witness test, LL&P will execute an annually renewable Small Power Producer Cogeneration Contract and the system may be started up.

Authority to Disconnect

If it is discovered that any equipment connected to the LL&P system is, in LL&P's judgment, problematic or is considered to be unsafe, it will be disconnected from the LL&P system, and may be disconnected without prior notice to the QF. Small Power Producers are also advised that they will be required to periodically provide certification of liability insurance as a condition of contract renewal, and to keep their system in active status. LL&P reserves the right to immediately disconnect any QF at any time if it discovers that the minimum required liability insurance has lapsed or has been cancelled or discontinued.

Liability Insurance Requirements

In accordance with the Colorado Public Utilities Commission rules governing small power production and cogeneration facilities, a qualifying facility (QF) operating in parallel with an investor owned utility in Colorado must maintain in effect at all times comprehensive bodily injury and property damage insurance coverage. This insurance is required in order to protect the public and the electrical power company from damage attributable to a small power production and cogeneration facility.
In order to protect the public, other utility customers, and Lamar Light and Power (LL&P) employees and equipment, LL&P has adopted insurance requirements for small power production and cogeneration facilities which are modeled after those designed by the PUC for investor owned utilities.

For systems of 10kW or less, the small power producer, at its own expense, shall secure and maintain in effect while interconnected liability insurance with a combined single limit for bodily injury and property damage of not less than $300,000 for each occurrence. For systems above 10 kW and up to 25 KW, the small power producer, at its own expense, shall secure and maintain in effect during the term of the Agreement liability insurance with a combined single limit for bodily injury and property damage of not less than $2,000,000 for each occurrence.

Except for qualifying facilities installed on a residential premise which have a design capacity of 10kW or less, Lamar Light and Power shall be named as an additional insured by endorsement to the insurance policy and the policy shall provide that written notice be given to LL&P at least thirty (30) days prior to any cancellation or reduction of any coverage. Such liability insurance shall provide, by endorsement to the policy, that LL&P shall not by reason of its inclusion as an additional insured, incur liability to the insurance carrier for the payment of premium of such insurance. For all qualifying facilities, the liability insurance shall not exclude coverage for any incident related to the subject generator or its operation.

Certificates of Insurance evidencing the requisite coverage and provision(s) shall be furnished to Lamar Light and Power prior to the date of interconnection of the small power generating system. Lamar Light and Power shall be permitted to periodically obtain proof of current insurance coverage from the generating customer in order to verify proper liability insurance coverage, such as by requiring certification as a condition of annual renewal of the cogeneration contract. The qualifying facility will not be allowed to commence or continue interconnected operations unless evidence is provided that satisfactory insurance coverage is in effect at all times. LL&P reserves the right to immediately disconnect any system in the event that such liability insurance has lapsed, or has been cancelled or discontinued.

The cost of the required insurance may be a factor in a qualifying facility's decision to become a power producer and, if so, whether to sell its power to LL&P or produce solely for its own use. LL&P recommends that the qualifying facility consult its insurance agent at an early stage in its planning so that this cost may be properly incorporated into that planning.

No Warranty

Any inspections, reviews of plans, specifications and/or sites and any approvals, written or oral, are conducted or provided solely for the use and purposes of LL&P; LL&P makes no warranty, direct or indirect, and provides no assurances, direct or indirect, as to the adequacy or safety of any plans, specifications, sites, installations, or other characteristic of the qualifying facility. The owners of the qualifying facility are solely responsible for determining and ensuring the adequacy and safety of all plans, specifications, sites, installations and other characteristics of the qualifying facility.

Qualifying Facility Design Data Requirements

Lamar Light and Power (LL&P), reviews all proposals for interconnection by a QF for compliance with LL&P guidelines. LL&P attempts, insofar as is reasonable, to determine whether a design will create problems on LL&P's system but cannot comment or make assurances on the technical prudence or economic feasibility of a proposed project.

LL&P cannot review your facility design until a complete design package is submitted. Typically, a complete design package would include:

(1) A complete site plan, detailing physical locations of all equipment to be installed from LL&P's supply line to the powerhouse. This plan should show sufficient detail to determine physical clearances between pieces of equipment and between any piece of equipment and an adjacent permanent structure. The site plan should show the location of proposed metering, disconnecting and circuit protective devices. Particular detail should be given to physical location of equipment in the powerhouse, and provisions for grounding of powerhouse equipment.

(2) A system one-line diagram which states wire sizes and types, as well as ratings and types of circuit protective devices. This diagram should include all equipment which has been installed or which will be installed up to LL&P's connection.

(3) A relay control diagram which clearly indicates relay contact arrangements and which indicates functionally the operation of all relays, protective devices and interlocks.

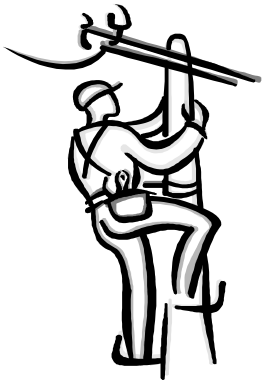
(4) Device types, sizes, model numbers, settings and manufacturer's data on all circuit protective devices and relays.

(5) The location, ratings, impedances, time constants and manufacturer's data for the generator and all associated control equipment, including but not limited to exciters, governors, voltage regulators and synchronizers, where applicable.

(6) The location, ratings and switching arrangement for power factor correction capacitors, if any.

(7) Proposed operating procedures for startup, shutdown and restart functions. The procedures should include all operational parameters and appropriate limits of operation.

(8) Anticipated peak power production and monthly energy production figures. LL&P recommends not purchasing equipment or beginning construction of facilities until a design review is completed and LL&P gives final written design approval.



LIGHT AND POWER

Interconnection Standards for Small Power Producers

The purpose of this document is to set forth the requirements of Lamar Light and Power (LL&P) regarding interconnection qualifying small power producing facilities. A qualifying facility (QF) is a small, customer owned generating facility with capacity of up to 10kW for a residential system and 25 kW for a commercial or industrial system which is powered by a renewable energy source, such as wind or solar, and which has obtained certification of its QF status.

LL&P is a municipally owned electrical power generation and distribution system which provides electrical power to the community of Lamar, Colorado and surrounding areas. Lamar Light and Power is a member of the Arkansas River Power Authority and obtains the majority of its wholesale power through ARPA. Pursuant to House Bill 08-1160, adopted by the Colorado Legislature in 2008 and signed into law by Colorado Governor Bill Ritter, municipally owned electrical power utilities which have 5,000 or more customers, along with investor owned electrical utilities and electrical power cooperatives, are required to interconnect with qualifying customer owned small power producing systems (QFs) and to credit any excess power beyond what the customer-owner of the QF consumes in any given month toward the customer's future monthly bills, an arrangement known as net-metering. Further, such utilities are required to purchase any annual excess power produced by QFs. In the case of municipally owned utilities, the annual excess power may be credited to the customer in a manner deemed appropriate by the utility.

LL&P will assist small power producers with respect to interconnection of the QF to LL&P's power system. LL&P customers considering installation of a small power producing facility should initially contact LL&P for basic information regarding interconnection.

LL&P will permit interconnection and parallel operation with a QF in accordance with the terms and conditions set forth in this document. Some of the information in this document is technical in nature. Customers considering installation of a small power producing facility should contact LL&P if assistance is needed to understand any such information. Inquiries concerning interconnection of a QF may be directed to:

Houssin Hourieh
Electrical Engineer
Lamar Light and Power
100 North Second Street
Lamar, CO 81052
(719) 336-7456
Email: hhourieh@lamarlp.com

Liability Insurance Requirements

In accordance with the Colorado Public Utilities Commission rules governing small power production and cogeneration facilities, a qualifying facility (QF) operating in parallel with an investor owned utility in Colorado must maintain in effect at all times comprehensive bodily injury and property damage insurance coverage. This insurance is required in order to protect the public and the electrical power company from damage attributable to a small power production and cogeneration facility.

In order to protect the public, other utility customers, and Lamar Light and Power (LL&P) employees and equipment, LL&P has adopted insurance requirements for small power production and cogeneration facilities which are modeled after those designed by the PUC for investor owned utilities.

For systems of 10kW or less, the small power producer, at its own expense, shall secure and maintain in effect while interconnected liability insurance with a combined single limit for bodily injury and property damage of not less than $300,000 for each occurrence. For systems above 10 kW and up to 25 kW, the small power producer, at its own expense, shall secure and maintain in effect during the term of the Agreement liability insurance with a combined single limit for bodily injury and property damage of not less than $2,000,000 for each occurrence.

Except for qualifying facilities installed on a residential premise which have a design capacity of 10kW or less, Lamar Light and Power shall be named as an additional insured by endorsement to the insurance policy and the policy shall provide that written notice be given to LL&P at least thirty (30) days prior to any cancellation or reduction of any coverage. Such liability insurance shall provide, by endorsement to the policy, that LL&P shall not be reason of its inclusion as an additional insured, incur liability to the insurance carrier for the payment of premium of such insurance. For all qualifying facilities, the liability insurance shall not exclude coverage for any incident related to the subject generator or its operation.

Certificates of Insurance evidencing the requisite coverage and provision(s) shall be furnished to Lamar Light and Power prior to the date of interconnection of the small power generating system. Lamar Light and Power shall be permitted to periodically obtain proof of current insurance coverage from the generating customer in order to verify proper liability insurance coverage, such as by requiring certification as a condition of annual renewal of the cogeneration contract. The qualifying facility will not be allowed to commence or continue interconnected operations unless evidence is provided that satisfactory insurance coverage is in effect at all times. LL&P reserves the right to immediately disconnect any system in the event that such liability insurance has lapsed, or has been cancelled or discontinued.

The cost of the required insurance may be a factor in a qualifying facility's decision to become a power producer and, if so, whether to sell its power to LL&P or produce solely for its own use. LL&P recommends that the qualifying facility consult its insurance agent at an early stage in its planning so that this cost may be properly incorporated into that planning.

No Warranty

Any inspections, reviews of plans, specifications and/or sites and any approvals, written or oral, are conducted or provided solely for the use and purposes of LL&P; LL&P makes no warranty, direct or indirect, and provides no assurances, direct or indirect, as to the adequacy or safety of any plans, specifications, sites, installations, or other characteristic of the qualifying facility. The owners of the qualifying facility are solely responsible for determining and ensuring the adequacy and safety of all plans, specifications, sites, installations and other characteristics of the qualifying facility.

Standards for Interconnection and Protection of Small Power Producers

1.0 Introduction

These standards have been established to assist small power producers in planning and designing and electrical interconnection with the Lamar Light and Power (LL&P) system. Small power producer personnel and LL&P personnel may be guided by this document when planning, installing, and operating customer-owned generating equipment. The following requirements are general in nature and may not cover all details of a specific installation. Potential small power producers should discuss project plans with LL&P before purchasing or installing equipment.

LL&P will assist any small power producer or cogenerator in its efforts to generate electric power and energy. LL&P encourages the development of small power projects which can supplement LL&P's existing generating resources whenever this can be done without adverse effects on the general public or to LL&P's equipment and personnel. To help achieve the maximum reliability and use of small power projects, LL&P will provide the potential small power producers with information, technical assistance, and other aid the small power producer might require in the evaluation of the technical and economic feasibility of the project.

2.0 General Requirements for Interconnection

Certain protective equipment (relays, circuit breakers, etc.) specified by LL&P must be installed at locations where the customer wishes to operate generating facilities in parallel with LL&P's system. The purpose of this equipment is to ensure safe and reliable power system operation and to allow prompt disconnection of the QF in the event of short circuit or other malfunction. Other changes, such as revisions to the electrical system configuration and/or modifications to protective equipment at other locations, may also be required in order to accommodate parallel operation. LL&P will assist QF owners in determining interconnection requirements. This document gives general information about parallel operation; however, LL&P may impose additional restrictions or require additional equipment when the particular installation so warrants. Each QF must be reviewed individually, since interconnection requirements vary with the type of generation equipment and the proposed location on LL&P's system. All costs associated with interconnection, necessary system additions, and modifications to accommodate the QF will be borne by the QF.

LL&P requires that the customer design, construct, and operate their equipment in a manner which will not degrade the quality of service to other LL&P customers. This requires that the QF equipment be designed, specified, and installed in a manner appropriate to its intended service and in accordance with all applicable standards regulating design, construction, and operation of such equipment. LL&P reserves the right to specify the quality and determine the adequacy of customer equipment, installation and operation in any respect which affects safety, reliability or quality of service.

LL&P will not assume responsibility for protection of the QF's generator(s) or any other portion of the QF's electrical equipment. The QF is fully responsible for properly protecting its equipment. Equipment which is not properly protected may be damaged as the result of normal system operation or disturbances on LL&P's system. LL&P will; however, aid the QF in determining conditions to which its equipment is likely to be subjected as a result of probable system operation, malfunctions, or disturbances, insofar as it is possible to determine these conditions in advance.

A permanent and weatherproof sign indicating the location of QF Generation Disconnect shall be clearly displayed at the point of service connection (in most cases at the customer meter). For QFs greater than 10kW of capacity, a one-line electrical diagram and the names and current telephone numbers of at least two persons that are authorized to provide access to the QF and who have authority to make decisions regarding

the QF interconnection and operation shall be included with or attached to the sign. This telephone listing shall be updated as needed to maintain its usefulness.

For interconnection of a QF to a radial distribution circuit, the aggregated generation, including the proposed QF, on the circuit shall not exceed 15% of the line section annual peak load as most recently measured at the substation or calculated for the line section. A line section is that portion of LL&P's electric system connected to a customer bound by automatic sectionalizing devices or the end of the distribution line.

The QF, 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 distribution feeder voltage (primary) level nearest the proposed point of change of ownership.

The QF, in aggregation 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 QF equipment on the system to exceed 87.5% or the short circuit interrupting capability.

If the QF is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the QF, shall not exceed 10kW.

If the QF is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its additional shall not create an imbalance between the two sides of the 240 volt service of more than 20% of nameplate rating of the service transformer.

3.0 Codes, Standards, and Regulatory Agencies

The QF must ensure that the facility and all equipment connected therewith comply with the National Electric Code, the National electrical Safety Code, and/or any applicable local, state, and federal government requirements, whichever are stricter. The QF agrees to hold LL&P harmless for any damage to person or loss to property arising out of the QF's failure to comply with such codes and legal requirements. The QF's installation must be inspected and certified by a Colorado State Electrical Inspector before the generation equipment may be energized or interconnected. Inspection and startup procedures will conform to Colorado Public Utilities Commission rules. Grounding shall be in accordance with applicable sections of the national electric Code and the National electrical Safety Code and shall conform to IEEE Standard 142, "IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems," and RUS Bulletin 65-1, "Guide for the Design of substations," where applicable. For a summary of applicable codes and standards, see Appendix II.

4.0 Inverter systems

Inverter systems are used to transform direct current to alternating current. The resulting waveform may be rich in harmonics. These nonstandard waveforms may cause radio and television interference on other customers' equipment as well as producing objectionable audible noise. Excessive harmonic content may also cause overheating in electrical equipment.

The inverter system should be designed and operated in accordance with UL1741. This standard ("Inverters, Converters, and controllers for Use in Independent Power Systems") addresses the electrical interconnection design of various forms of generating equipment. Many manufacturers submit their equipment to a Nationally Recognized Testing Laboratory (NRTL) that verifies compliance with UL1741. This "listing" is then marked on the equipment and supporting documentation.

All three-phase inverter installations shall be served by a dedicated transformer which is connected delta on the customer side and ground wye on LL&P's side. The cost of this transformer and associated equipment shall be borne by the QF.

Inverter systems require a significant reactive power flow to ensure proper operation. LL&P requires the customer to provide equipment to correct the power factor. However, care must be taken to ensure that an inverter system which is electrically close to capacitors cannot drive an isolated load. Self-commutated inverters as well as line-commutated inverters connected to rotating machines may operate in a self-excited mode. In order to protect LL&P's equipment and other customer's equipment, the QF shall install protective relays to prevent isolated operation. For the purpose of preventing service to isolated loads, inverters shall conform to standards outlined in IEEE 929.

5.0 Protection of the Utility System

In order to be assured of continuing safe, reliable service to LL&P customers, LL&P must be concerned with the manner in which QFs are connected to the existing LL&P system. LL&P's concerns are fourfold:

A. The QF must promptly disconnect from LL&P in the event of a utility system disturbance;
B. The QF must disconnect in the event of a malfunction or disturbance on the QF equipment;
C. The QF must not backfeed a de-energized LL&P line; and
D. The QF must not significantly degrade the quality of service to other LL&P customers.

6.0 Utility System Disturbances

In the event of a utility line fault or other system disturbance, protective equipment will promptly act to de-energize the affected line section. A QF connected to this portion of line represents an additional source of power to energize the line. Thus, the QF's equipment must also automatically act to disconnect the generator(s) to avoid contributing to the severity of the fault, to avoid isolated operation and to protect the QF equipment.

Isolated operation occurs when a portion of the LL&P load becomes separated from the LL&P source but is still connected to the parallel generation. If the isolated load is sufficiently large with respect to the rated output of the QF generators, the voltage will collapse and protective relays will take the machines off line. When the generator rating is greater than or comparable to the size of the isolated load, sustained independent operation becomes possible. This situation is intolerable, since the voltage and frequency of the isolated network are likely to be poorly regulated and damage to either LL&P equipment or that of other customers is likely to result. Restoration of normal service to this island is also hampered by the presence of an isolated energy source.

In instances where LL&P's system arrangement is such that it is possible that the generators will not always be isolated with a sufficiently large load to prevent independent operation, LL&P requires the installation of voltage and frequency relays even on the smallest QFs. For installations with rated capacity of greater than 10kW, specific devices are required to detect faults on LL&P's system as well as voltage and frequency relays to detect isolated operation. Equipment may also be required on LL&P's system to provide additional assurance that isolated operation does not continue. The need for such equipment will be determined on a case by case basis.

7.0 Qualifying Facility Disturbances

To prevent loss of service to other LL&P customers, the QF must provide protective equipment to promptly disconnect the QF's generators in the event of a fault or other disturbance on the QF's installation.

The protective equipment must be coordinated with LL&P's equipment to ensure proper operation in the event of a fault. LL&P will assist the QF to properly coordinate the protective equipment.

8.0 Backfeed to Utility System

The QF's generators provide an additional source of power for LL&P's network. The QF must provide protective equipment sufficient to give positive assurance that the generators cannot be connected to an otherwise de-energized LL&P line. This prevents a potential hazard to LL&P personnel who may be in contact with the line for maintenance purposes. In addition to an automatic fail-safe device, LL&P will require an accessible disconnect switch that is visible marked "Generation Disconnect" and has the capability of isolating the energy generated by each QF. This device must be lockable in the open position and may be operated by either party at any time in order to maintain safe operating conditions. At a minimum, this protection can be provided by an isolation switch which can be locked in the open position by LL&P to visibly indicate isolation of the QF. Other equipment such as undervoltage, synchronizing, voltage phase sequence or reclosure relays may also be required.

If it is discovered that any equipment connected to the LL&P system is in LL&P's judgment problematic or is considered to be unsafe it will be disconnected immediately from the LL&P system.

9.0 Power Quality

The QF will not be allowed to degrade the quality of power delivered to other LL&P customers. The QF will be expected to operate within the limits on voltage, frequency and harmonic content as outlined in Appendix II.

The QF synchronous or inductive generation is expected to operate at nearly unity power factor as is practical to prevent voltage flicker upon switching. The generators and associated equipment are expected to be engineered to allow stable unity power factor operation without exceeding the voltage regulation limits outlined in RUS Bulletin 169-4, "Voltage Levels." Should voltage regulation or lamp flicker become a problem, then operational restrictions may be imposed until the situation can be corrected.

Excess harmonic content or unnecessary service interruptions will not be allowed. If degradation in quality of service to other LL&P customers or interference with operation of LL&P equipment occurs, LL&P will disconnect the QF generators until such time as the problem is resolved.

10.0 Protective Equipment

The type and quality of protective equipment required will depend on the size and type of the QF generation equipment as well as the electrical characteristics of LL&P's interconnection. At a minimum, this equipment will consist of a circuit breaker with associated relaying, a disconnect switch, and voltage and frequency regulation relays. Additional equipment may be necessary for a given installation. The equipment specified above may be part of a vendor-supplied control package, providing the desired level of protection is ensured. Any such protective equipment must be approved by LL&P for each application. LL&P shall be the only judge of adequacy and suitability of protective equipment for QF installations.

11.0 Protection of Qualifying Facilities

The QF is solely responsible for protection of its equipment. To facilitate its design, LL&P herein lists potential hazards to the Qualifying Facility equipment which might occur as a result of interconnection with LUB's system. The probable hazards are of three types: those that occur as a direct result of a faulted transmission or distribution line, synchronous problems, and voltage surges.

Transmission and distribution lines are susceptible to both short circuits and ground faults. Both of these line faults may produce excessive phase currents, single phased supply and excessive negative sequence currents. Typical equipment to sense and protect against these hazards are listed in Section 3.

The QF generator can be damaged by interconnection with LL&P's system if the voltage phase sequence or phase angle of the machine does not match that of the system. For synchronous generators the customer must provide either automatic synchronizing equipment or a synchronizing relay to supervise manual closure. Unsupervised manual synchronizing is not permitted. Induction starting will be allowed if the inrush current is not excessive. Should voltage dip or lamp flicker problems result from induction starting, other steps must be taken to eliminate these problems.

Damage may result to a QF generator as a result of automatic reclosure unless proper protection is provided. LL&P's transmission and distribution lines are usually equipped with circuit reclosers which, after a time delay, attempt to restore a circuit which has been tripped due to a fault. If the fault was temporary, the reclosure is successful and the circuit is restored to service; if not, the circuit is locked out until manual reclosure is attempted. The recloser may attempt to restore the circuit several times before lockout occurs. If the QF generator was not taken off-line when LL&P's circuit was opened, the generator and LL&P's system may not reclose in synchronism. Voltage surges may occur upon reclosure. Protective devices should be installed to trip the generator before reclosure is attempted and to prohibit reclosure into the LL&P system if LL&P's voltage is of abnormal magnitude or phase sequence. Modifications to LL&P's recloser or additional equipment may be required to protect the QF. The cost of such modifications will be charged to the QF.

Transient voltage surges may occur on LL&P's lines due to switching operations or lightning strikes. The QF should have protective devices to mitigate the effects of these surges as well as direct lightning strikes. Inverter systems and other solid state components are particularly susceptible to damage by voltage surge.

Details of typical protective equipment to sense and mitigate the potential hazards described above are given in Section 3 by class of QF.

12.0 Inspection and Maintenance

The QF shall not commence interconnected operation until:

1) The QF has supplied LL&P with a completed Application for Interconnection on a form supplied by LL&P for review and acceptance.
2) The QF has obtained a certificate of code compliance from a Colorado State Electrical Inspector;
3) LL&P has made any necessary modifications to its system to accommodate the QF;
4) LL&P has inspected and tested the QF and certified in writing that the QF has complied with all requirements for interconnection; and
5) The QF has submitted proof of adequate insurance.

The completed installation will be subject to a final inspection and test by LL&P for compliance before parallel operation is permitted. LL&P will determine satisfactory performance.

The QF must notify LL&P prior to any modifications made to the QF or to the interconnection between the QF and LL&P. The QF must receive approval from LL&P prior to proceeding with such modifications. The QF must permit LL&P at any time, to install or modify any equipment, facility, or apparatus to protect the safety of its employees and insure the accuracy of its metering equipment. These costs will be borne by the QF.

The QF must permit LL&P employees to enter its property at any time for the purpose of inspecting and/or testing the interconnection facilities to ensure their continued safe operation and the accuracy LL&P's

metering equipment, but such inspection does not relieve the QF of the obligation to maintain the facilities in satisfactory operating condition.

The QF shall discontinue parallel operations when requested by LL&P:

1) To facilitate maintenance, test, or repair of utility facilities;
2) During system emergencies;
3) When the QF's generating equipment is interfering with other customers on the system;
4) When an inspection of the QF reveals a condition likely to be hazardous to LL&P's system;
5) When an inspection of the QF reveals that the generating equipment is operating outside allowable limits on voltage, frequency power factor or harmonic content;
6) When the owner of the QF fails to provide proof of minimum required liability insurance, or when LL&P learns, form any other source, that such required liability insurance has lapsed or is not otherwise in full effect as required in "Liability Insurance Requirements."

The QF shall operate and maintain the interconnection equipment at its cost unless previous arrangements have been made with LL&P to maintain the interconnection. In this case, LL&P will operate and maintain the interconnection and bill the QF for its services.

13.0 Important considerations for Interconnection

The QF should allow adequate time in the design and construction schedule for design interface meetings with LL&P and for material procurement by LL&P. This time will vary depending on the QF's location, size, design, specific operating and system requirements, and the availability of materials needed to accomplish the interconnection.

If it is discovered that any equipment connected to the LL&P system is in LL&P's judgment problematic or is considered to be unsafe it will be disconnected from the LL&P system.

QFs that generate electrical energy for on-site use only and are interlocked or otherwise prevented from feeding energy into the LL&P system are special cases and may not be required to meet all of the requirements of this document. However, they are required to show by design and by operation that they cannot feed energy into the LL&P system.

14.0 Specific Requirements for Interconnection

LL&P has established guidelines for the protection and interconnection or parallel generators by size classes. These guidelines represent the minimum requirements for interconnection and recommended practice for QF equipment. The QF shall be the sole judge of what equipment is necessary to protect the QF generators and associated electrical equipment. LL&P shall be the sole judge of what equipment is necessary to ensure a safe, reliable interconnection with LUB's system.

The size classes for QF parallel generation are:

1) 10 kW and below, and
2) 10-25 kW

15.0 Qualifying Facilities of 10 kW or Less (Single or Three Phase)

The following requirements for small generators assume a low density of parallel generation customers on the service circuit. LL&P may impose additional requirements if necessary for safe, reliable service to other LL&P customers.

The QF of 10kW or less shall be required to provide:

1) A disconnect switch (AC or DC) which may be locked in the open position and which provides visual indication of isolation;
2) A circuit breaker rates for the service to which it is applied;
3) A line voltage relay which will prevent the generator from being connected to a de-energized source;
4) A dedicated approved transformer (if the QF is a three-phase inverter installation);
5) Undervoltage and overvoltage relays;
6) Underfrequency and overfrequency relays; and
7) Surge arrestors rated for the applied service.
8) 150 Amp with lever by-pass, 4 terminal, 2S meter socket for a production meter.
9) 150 Amp with lever by-pass, 5 terminal, 2S meter socket for service entrance meter (bi-directional meter).

In addition, the QF should consider the installation of:

1) Thermal cutouts to protect the generator from excessive currents or single phasing (if applicable); and
2) An overspeed relay, if applicable.

For a QF of this size, the customer shall not install capacitors at the QF for power factor correction. LL&P shall provide the reactive power requirements of the QF to avoid the potential for self-excitation.

16.0 Qualifying Facilities of 10-25kW (Three Phase Only)

The following requirements represent the minim equipment necessary for safe, reliable interconnection. LL&P may require additional equipment if the individual application warrants.

The QF of 10-25kW shall be required to provide:

1) An isolation switch;
2) A circuit breaker;
3) Surge arrestors;
4) A dedicated transformer; and
5) Protective relaying to provide the following functions:
    a. Short circuit protection (Devices 52, 52V);
    b. Isolation protection (Devices 27/59, 81);
    c. Breaker closing/reclosing control (Devices 25,47); and
    d. Under and overspeed control (Devices 15) for induction generators.

17.0 Protective Device Descriptions

Device numbers for Protective Equipment:

15 – Tachometer Relay
25 – Synchronizing Relay
27 – Undervoltage Relay
32 – Directional Power Relay
40 – Generator Field Failure Relay
46 – Phase-Balance (Reverse Phase) Relay
47 – Phase-Sequence Relay
51 – Time-Overcurrent Relay
    A. 51GB – Ground Bank Time-Overcurrent
    B. 51T -- Transformer time-Overcurrent

C. 51V – Voltage-restrained Time-Overcurrent or Voltage-Controlled Time-Overcurrent

52 – Circuit Breaker (52G – Generator Circuit Breaker)
59 – Overvoltage
64G – Ground Relay
67 – Directional Overcurrent
81 – Frequency Relay
87 – Differential Relay

A. 87G – Generator Differential
B. 87T – Transformer Differential

90 – Field voltage Regulator
S.A. – Surge Arrestor

Appendix I – Summary of Codes and Standards

General

- NFPA 70 (2005), National electric code
- IEEE Std 929-2000 IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems
- UL 1741 Inverters, Converters, and controllers for Use in Independent Power systems
- IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity)
- National Electric Safety Code
- Local Building Codes
- NEMA MFG 1-1998, Motors and Small resources, revision 3
- NEMA MG 1-2003 (Rev 2004), Motors and Generators, Revision 1
- ANSI C84.1-1995 Electric Power Systems and Equipment – Voltage Ratings (60 Hertz)
- IEEE Std 100-2000, IEEE Standard Dictionary of Electrical and Electronic Terms

Grounding

- REA Bulletin 65-1, "Design Guide for Rural Substations
- IEEE Standard 142, "Recommended Practice for Grounding of Industrial and Commercial Power Systems"

Voltage Drop

- REA Bulletin 169-27, "Voltage Regulator Application on Rural Distribution Systems"
- REA Bulletin 169-4, "Voltage Levels on rural Distribution Systems"

Phase Balance

- Less than 3% (three phase difference)

Frequency

- +0.1 (for Qualifying Facility of rated capacity greater than 5 kW)

Harmonics

- IEEE Standard 519, "IEEE Guide for harmonic control and Reactive Compensation of Static Power Converters"

Flicker

- REA Bulletin 160-3, "Engineering and Operations Manual – Service to Induction Motors"

Surge Control

- IEEE Std. C62.41.2-2002, "IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000 V and Less) AC Power Circuits"
- IEEE Std. C37.90.1-1989 (Rev. 1994), "IEEE Standard Surge withstand Capability (SWC) Tests for Protective Relays and Relay Systems"
- IEEE Std C62.45-1992 (rev. 2002), "IEEE Recommended Practice on Surge Testing for Equipment connected to Low-Voltage (!000 V and Less) AC Power Circuits."

Interference

- IEEE Std C37.90.2 (1995), "IEEE Standard Withstand Capability of Relay Systems to Radiated

Service reliability

- Qualifying Facility shall not cause loss of service to other customers.

Other (May be Required)

- City/county Zoning or Building Permit
- Special Use Permit/Conditional Use Permit from County
- FAA Approval for Tower

LIGHT AND POWER

Interconnect Application
For Qualifying Facilities 25 KW or smaller

System Owner Information

Name:_____

Mailing address: _____

City: _____ State: _____ Zip Code: _____

Service address: _____

Phone: _____ Email: _____

Account No. (from City of Lamar Utilities Bill): _____

System Information

Location:_____

Designed Capacity: Solar_____Wind_____Other_____

Tracker Description (if applicable): _____

Battery Bank Size (if applicable):_____

Inverter Manufacturer:_____Inverter Model:_____

Inverter Nameplate Rating: _____

Check one: ____Single Phase ____ Three Phase____DC Disconnect Switch ____ AC disconnect Switch

Disconnect Location _____

Energy Source: ____Solar ____ Wind Turbine ____Other (describe) _____

Prime Mover: _____Photovoltaic _____ Turbine_____ Other (describe) _____

_____

Is the equipment UL1741 listed? ____ Yes ____No

Estimated Install Date: _____ Estimated In-Service Date: _____

Interconnection Customer Acknowledgement

I certify that, to the best of my knowledge, the information provided in this application is true and correct. I agree to abide by the Interconnection Standards for Cogenerators and Small Power Producers and return the Certificate of Completion when the Qualifying Facility has been installed.

Signed (system owner):_____ Date: _____

Utility Approval

Interconnection of Qualifying Facility described herein is approved contingent upon the Interconnection Standards for Small Power Producers, the return of Certificate of Completion, Lamar Light and Power Inspection, and return of certification of insurance coverage.

Signed (Lamar Light and Power Rep.) _____ Date: _____

Application ID number: _____

LIGHT AND POWER

Small Power Producer
Certificate of Completion

Application ID number: _____

Installation Contractor Information

Installation Contractor: _____

Contractor License Number: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Daytime Phone: _____ Fax: _____

Email: _____

Hardware and Installation Compliance

1. The system, as installed, is the same equipment as specified in the customers approved Interconnection Application.

2. (If applicable) The system hardware is in compliance with Underwriters Laboratories (UL) 1741, Standard for Static Inverters and charge Controllers for Use in Photovoltaic Systems; UL 1703, Standard for Safety; Flat-Plate Photovoltaic Modules and Panels; and IEEE 1262-1995, IEEE Recommend Practice for Qualification of Photovoltaic Modules.

3. The system has been installed in compliance with IEEE Standard 929-2000, recommended Practice for Utility Interface of Photovoltaic systems (if applicable); Lamar Light and Power's Interconnection Standards for Cogenerators and Small Power Producers; and with applicable requirements of state and local electrical codes and the National Electric Code (NEC).

Signed (Installer): _____ Date: _____

Electrical Inspection

As a condition of interconnection, you are required to send/fax a copy of this form along with a copy of the signed electrical permit (from the State of Colorado Electrical Inspector) to:

Houssin Hourieh
Lamar Light & Power
100 N. Second St.
Lamar, CO 81052
Fax: 719-336-7450
Email: hhourieh@lamarlp.com

Certificate of Insurance

As a condition of interconnection, you are required to send/fax a copy of certification of liability insurance coverage which will provide the levels of coverage established in the LL&P interconnection insurance requirements and which remains in effect for a minimum of one calendar year. Small power producers will be required to periodically submit certification of continued insurance coverage as a condition of remaining connected to the LL&P system.

Upon receipt of the Certificate of Completion, the signed electrical permit, and the Certificate of Insurance Coverage, LL&P will schedule its inspection within ten business days. The system must pass LL&P's inspection before parallel operation with LL&P's system will be allowed.

Approval to energize the Small Generating Facility (for company use only)

Energizing the Qualifying Facility Referenced above is approved and satisfies applicable LL&P Interconnection Standards for Cogenerators and Small Power Producers.

LL&P Representative Name (Print) : _____

Signed (LL&P Rep.): _____ Date: _____

LIGHT AND POWER

Customer Owned Generation (COG) Contract

Customer-sited Generation system
(Systems 25kW Nameplate Capacity & Below)

This contract is made and entered into this _____ day of _____, _____ by and between Lamar Light and Power (LL&P), whose address is 100 N. Second Street, Lamar, Colorado 81052, and _____ ("Customer") whose electric service address is _____, Colorado_____ (the "service address").

1. **Purchase and sale.** On the terms and subject to the conditions set forth in this contract, the customer agrees to assign all Renewable Energy Credits ("RECs") generated by the customer Owned Generation (COG) at the address listed to LL&P for a term of twenty (20) years from the installation date set forth in the Certificate of Completion.
2. **Representations.** The signatories hereto individually and collectively make the following representations:
    a. They are individually authorized and competent to sign this Contract and they have read the Contract and agree to be bound by its terms.
    b. Customer receives electric service from LL&P at the address set forth above, and for the purpose of this Contract is the person in whose name electric service is listed at the service premise.
    c. Customer is an end-use electric customer located within the electric service territory of LL&P in Colorado, whose primary business is not the generation of electricity for retail or wholesale from the same facility.
    d. The customer has installed a new COG system at the service premise, which has at least a two-year warranty, as of the date set forth, and conforms to the specifications, as described in LL&P's interconnect agreement.
    e. If the COG system is photovoltaic the orientation of the COG system is free from shade trees, buildings and other obstructions that might shade the orientation of the system

measured from the center point of the solar array through a horizontal angle plus or minus 60 degrees and through a vertical angle between 15 degrees and 90 degrees above the horizontal plane.

3. Terms and Conditions.

a. Customer shall be solely responsible for ensuring that the COG system equipment installed for this program meets all applicable codes, standards, and regulatory requirements.

b. The COG system shall be located on the Customer's electric service premises at all times during the terms of this contract.

c. The COG system shall be a minimum capacity of 500 watts and a maximum capacity not to exceed 25 kilowatts, nameplate output capacity.

d. The term of this Contract shall be one (1) year beginning _____; and shall be annually renewable for a period of twenty (20) years with mutual consent of all signatories; however, this Contract is assignable by Customer to any subsequent purchaser of customer's premises. LL&P shall own all RECs produced by the COG system during the Term of this Contract.

e. LL&P shall receive all excess energy, if any, generated by the COG system at the service premise and not used by the Customer. The Customer will receive compensation for the energy generated by the COG system and not used by the Customer at the premise via "net metering" as set forth in LL&P's net metering Tariff as the same may be changed from time to time.

f. This Contract shall apply to new COG equipment only. Used equipment does not qualify for the incentive.

g. LL&P does not imply any representation or warranty of the design, installation, or operation of the COG equipment and LL&P expressly disclaims any and all warranties of the equipment as to workmanship, quality, or performance, including the fitness of the equipment for the purpose intended.

h. LL&P shall not be responsible or liable for any personal injury or property damage caused by the COG system or any individual component equipment of the system.

i. Customer shall indemnify, defend, and hold LL&P, its employees, agents, successors, assigns, subsidiaries and affiliates harmless against any and all claims, demands, liens, lawsuits, judgments, or actions of whatsoever nature that may be brought on account of

the installation, maintenance, operation, repair or replacement of the COG system or any component equipment on the system.

j. Customer shall comply with all of the rules stated in LL&P's applicable Electric Tariff and Interconnection Agreement as the same may be revised from time to time. In the event of any conflict between the terms of this contract and the Electric Tariff and/or Interconnection Agreement, the provisions of the tariff or agreement shall control.

k. The customer shall maintain the COG system and the individual components of the system in good working order at all times during the Term of this contract. If during the Term of this contract, the COG system or any of the individual components of the system should be damaged or destroyed, the Customer shall promptly repair or replace the equipment to its original specifications, and, if applicable, tilt and orientation, at the Customer's sole expense.

l. Customer shall procure and maintain in effect at all times during the Term of this contract liability insurance as specified in LL&P's Small Power Producer Standards and Requirements. LL&P reserves the right to alter the amounts of liability insurance required as necessary to assure the safety and protection of its equipment, employees, and customers.

m. This Contract and the terms contained in this contract shall be binding and enforceable against the parties for as long as the Contract remains in effect.

n. If any disputes arise concerning this Contract, including but not limited to enforcement of any term or condition of this contract, the prevailing party in any action brought for the purpose of enforcing such provisions shall be entitled to recover its reasonable attorney fees, expenses and costs of such action from the non-prevailing party.

o. Failure of either party to enforce any term or condition of this Contract shall not constitute a waiver of that term or condition or of any term or condition of this Contract.

p. The parties agree that a cause of action for breach of any provision of this Contract shall not accrue until the non-breaching party actually discovers the breach.

q. If any of the representations of the parties are false or incorrect, such false or incorrect representation shall constitute a material breach of this Contract.

r. This Contract shall be governed by and interpreted in accordance with the laws of the State of Colorado.

s. This Agreement may be executed in two or more counterparts, each of which is deemed original but all constitute one and the same instrument. The parties agree that a facsimile copy of a signature will be deemed original and binding.

t. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of the respective parties hereto. In order for an assignment to be effective, Customer is required to provide to assignee the following documents: Assignment Agreement, a copy of this contract, a copy of the Interconnection Agreement, and any remaining warranty information. Customer is released from any and all future liability under this contract upon its assignment.

u. By executing this Contract, Customer grants to LL&P permission to share the location of the COG system and other information concerning the RECs sold to LL&P by Customer under this contract to other Colorado Public Utilities, Municipalities, Cooperatives, and other entities that may be involved with the transaction of RECs for the limited purpose of ensuring that the RECs associated with the COG system have not been sold to another entity.

As a qualified LL&P customer I have read, understand, and agree to the terms of the Contract set forth above.

Customer name (printed):_____

Customer Signature: _____ Date: _____

By: _____ Date: _____

(Authorized signature for LL&P)

Please mail the signed contract to the LL&P program manager at the address shown below. The Contract will be signed by LL&P and a copy of the Contract will be mailed back to you.

Lamar Light and Power
Houssin Hourieh
100 N. Second Street
Lamar, CO 81052