

Title: Net Metering Interconnection Standards

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1.0 INTRODUCTION

1.1 Purpose

The purpose of these interconnection standards for Qualified Small Customer / QF Energy Facilities is to describe the requirements and procedures for safe and effective connection and operation of Small electric generators on the Lafayette Utilities System Electric Distribution System. The first step in this process is to read and meet this technical specification. The second step is to complete the Application (pages 4-5) and the check list of requirements listed on pages 6-7. **The Customer may request the vendor of the equipment or the electrician help fill out this application.** The third step is to contact the appropriate LUS representative; Jack Robertson at 337-291-8972 (for residential customers) or Keith Zerangue at 337-291-5846 (for commercial customers).

A Net Metering Customer may operate an Electric Generator at 60 Hertz (Hz), single- or three-phase at voltages up to and including 480V in parallel with Lafayette Utilities System's Electric Secondary Delivery System pursuant to an Interconnection Agreement, provided that the equipment meets or exceeds the requirements of this standard. Any interconnection request above the 480V level will be considered on a case by case basis. Contact Lafayette Utilities Engineering (Scotty Touchette at 337-291-5994) to discuss any interconnection requests of this type.

Two objectives must be met to arrive at compliance by the proposed installation:

- 1.1.1 **Safety:** The Net Metering Customer's Renewable Energy Facility will be held to the same Standard of Care, as Lafayette Utilities System is required to maintain. In addition, the safety of the general public and the personnel and equipment of Lafayette Utilities System shall in no way be reduced or impaired as a result of the Interconnection.

A The Net Metering Customer's Renewable Energy Facility shall be equipped with Protective Functions designed to prevent the Renewable Energy Facility from being connected to a de-energized circuit owned by Lafayette Utilities System.

B The Net Metering Customer's Renewable Energy Facility shall be equipped with the necessary Protective Functions designed to prevent connection or Parallel Operation of the Net Metering Customer's facility with the Electric Secondary Delivery System unless the Electric Secondary Delivery System service voltage and frequency are of normal magnitude.

The design of some systems provides these functions without adding equipment at the PCC. Each system not providing additional devices at the PCC must be shown to be capable of these functions.

- 1.1.2 **Customer Impact:** The quality, reliability and the availability of service to Lafayette Utilities System's other Customers shall not be diminished or impaired as a result of the Interconnection.

This standard describes typical connection requirements. Some installations, however, may require more extensive Interconnection Facilities, and will be addressed on a case by case basis. This is most likely to be required when several Customers desire to connect Renewable Energy Facilities to the same transformer or on the same distribution feeder.

1.2 Scope

Customer Renewable Energy Facilities may be installed within Lafayette Utilities System's service area on the Net Metering Customer's side of the meter. These facilities will be connected to the Electric Secondary Delivery System when the Electric Secondary Delivery System is operating under normal conditions. The Net Metering Customer's entire load or any part of it may be supplied with energy by the Renewable Energy Facility. Lafayette Utilities System's facilities will be available to handle the Net Metering Customer's entire load as needed.

Applications for Net Metering are limited to:

Residential Maximum Generator Size Total	Non Residential Maximum Generator Size Total	Type of Fuel
25kW	100kW	Renewable fuel as solar, wind, or qualified biomass

Generators that do not qualify for Net Metering and desire interconnection shall contact Lafayette Utilities Engineering (Scotty Touchette at 337-291-5994).

The provisions contained in this document are the minimum requirements for safe and effective Interconnection and operation of Net Metering Facilities operating in parallel with Lafayette Utilities System's Electric Secondary Delivery System.

1.3 Net Metering Interconnection Application

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1.3.1 Application

Original to be kept by Design Engineer in Customer file.	
<p>INTERCONNECTION APPLICATION QUESTIONNAIRE FOR NET METERING FACILITIES Enter information in the empty fields below. This form shall be completed before the facility is connected to the Lafayette Utilities System Electric Secondary Delivery System. For questions related to this form, contact the appropriate LUS representative (refer to Sec.1.1 above). The Customer may want to have the vendor of the equipment help fill out this application</p>	
Send this form to the appropriate LUS representative (refer to Sec. 1.1 above) at 1314 Walker Road Lafayette, LA 70506	
Date	
Customer's Name	
Mailing Address	
Facility Location (if different from above)	
Contact	
Daytime Phone	
Evening Phone	
Customer Account (from electric bill)	
Is the unit able to run when LUS electricity is unavailable?	
System Type: Solar, Wind, Biomass	
Renewable Energy Facility Rating(s) (kW): (95° F at location)	
Renewable Energy Facility Rating(s) (kVA): (95° F at location)	
Power Factor	
Will you supply necessary VAr requirements?	
Type (inverter, synchronous or Induction)	
Manufacturer	
Model	
Drawing*	
<p>*Adequate drawings of the Net Metering Customer's proposed Renewable Energy Facility, which will include a one line diagram and proposed relay systems, shall be submitted to Lafayette Utilities System for review during the planning stage. This drawing should be available from your vendor. Additional drawings may be required on a case by case basis. (3.8.4)</p>	

Net Metering Interconnection Application

Customer / Date	
Voltage Rating	
Ampere Rating	
Number of Phases	
Frequency	
Short Circuit Current	
Do you plan to export power?	
If yes, maximum expected?	
Installer	
Qualifications / Credentials	
Mailing Address	
City	
State	
Zip Code	
Daytime phone	
Installation Date	
LAFAYETTE UTILITIES SYSTEM ONLY PAST THIS POINT GO TO NEXT PAGE TO ANSWER QUESTIONS	
Agreement Date (Day)	
Agreement Month	
Agreement Year 20__	
Assignment date (Day)	
Assignment Month	
Assignment Year 20__	

Net Metering Interconnection Application

1.3.2 Check List

This checklist is a summary of the requirements that can be found in detail in this document (Section numbers are provided after each requirement.) Customer is encouraged to fill this out.

This document is part of the application and shall be filled out by Customer and checked by Lafayette Utilities System Engineering staff. The Customer may want to have the vendor of the equipment help fill out this application

Customer Name
Date
Location
Power Source
Type of Process
Lafayette Utilities System Requirements - Required for all.
Accessible and Lockable Disconnect with visible opening: See section (3.8.1) (Provide manufacturer and model number)
Description of proposed compliance:
Comment
2. Disconnect intertie within 10 cycles of a service interruption or fault. See sections (1.1.1, 3.8.8 & 3.12.3)
Description of proposed compliance
Comment
3. Block Renewable Energy Facility from energizing dead circuits. See section (1.1.1)
Description of proposed compliance
Comment

Net Metering Interconnection Application

Questions on this page shall only be answered by Non Residential Customers

Customer/ date
4. Identify power factor. See section (3.8.6)
Description of proposed compliance
Comment:
5. Supply reactive power. See section (3.8.7)
Description of proposed compliance
Comment:
6. Limit voltage surges and sags. See section (3.8.8)
Description of proposed compliance
Comment:
7. Limit voltage flicker. See section (3.8.9)
Description of proposed compliance
Comment:
8. Limit harmonic voltage and current. See section (3.8.11)
Description of proposed compliance
Comment:
9. Specify protective devices and settings. See sections (3.12 & 3.12.3)
Description of proposed compliance
Comment:
10. Automatic Synchronization system within 1/2 cycle or disconnect. See Sections (3.14 & 3.8.10)
Description of proposed compliance
Comment:

2.0 DEFINITIONS

Abnormal Operating Conditions – A situation in which Lafayette Utilities System is operating the Electric Distribution System and the Electric Secondary Delivery System in a manner inconsistent with normal configuration or under conditions that do not normally exist. Examples of abnormal operating conditions are times when Lafayette Utilities System must switch distribution feeder circuits out of use for repairs and switch other alternate feeders into use to deliver energy to Customers.

Customer - Any entity interconnected to Lafayette Utilities System's Electric Secondary Delivery System who takes electric service under one of Lafayette Utilities System's rate schedules.

Displaced load - The Net Metering Customer's entire electrical requirement or a portion of it that, except for the output of the Net Metering Customer's Renewable Energy Facilities, would have been served by Lafayette Utilities System.

Electric Distribution System – All of Lafayette Utilities System's wires, equipment, and facilities having a voltage of 13.8kV or below including the Electric Secondary Delivery System

Electric Secondary Delivery System - Lafayette Utilities System's wires, equipment, and facilities having a voltage of 480V or below to which the Net Metering Customer's Facility is interconnected (the Electric Secondary Delivery System is a subset of the Electric Distribution System).

Interconnection - The physical connection of facilities to the Electric Secondary Delivery System so that Parallel Operation can occur

Interconnection Agreement - The Standard Interconnection Agreement for Net Metering Facilities approved by the Lafayette Public Utilities Authority and Lafayette City Parish Council.

Interconnection Facilities - All facilities installed solely to interconnect the Net Metering Customer's system with that of Lafayette Utilities System to facilitate the exchange of power between the Net Metering Customer's Renewable Energy Facilities and Lafayette Utilities System's power system including, but not limited to, connection, transmission, distribution, engineering, transformation, switching, metering, and safety equipment. Interconnection Facilities shall include any additions and/or modifications to Lafayette Utilities System's system deemed by Lafayette Utilities System to be necessary.

Network Service - Two or more primary distribution feeder sources electrically connected on the secondary (or low voltage) side to form one power source for one or more Customers. This configuration is designed to maintain service to the Customers even after the loss of one of these primary distribution feeder sources.

Net Metering Customer - Any Customer that takes service under Lafayette Utilities System's net metering.

Net Metering Facility - The hardware and software installed to measure the energy flow both into and out of the Net Metering Customer's facilities for the purpose of determining the usage for billing, if any.

Parallel Operation - The operation of Renewable Energy Facilities by a Net Metering Customer while the Net Metering Customer's facilities are physically and electrically interconnected to Lafayette Utilities System's Electric Secondary Delivery System.

Point of Common Coupling (PCC) - The point where transfer of any electric power between the Customer's facilities and Lafayette Utilities System's Electric Secondary Delivery System takes place, normally at the point of attachment.

Protective Function - Unsafe Operating Conditions shall be prevented from occurring before, during, and after the Interconnection of a Renewable Energy Facility with the Electric Secondary Delivery System. This system typically uses hardware (including switching devices), relay protection schemes and software that and shall be designed to isolate the Net Metering Customer's Renewable Energy Facility or to disconnect it from the Electric Secondary Delivery System under Unsafe Operating Conditions or outages.

Quality of Service - An operating state of the Electric Secondary Delivery System that provides usable power to a Customer. This state of usable power includes the parameters specified for power factor, voltage surges and sags, voltage flicker, frequency and harmonics. For more information on these parameters, refer to the first page of this standard for these sections.

Renewable Energy Facility - A system of hardware and software by which electric energy is generated using sun, wind, or biomass products as the source and as allowed to be interconnected to Lafayette Utilities System's Electric Secondary Delivery System.

Stabilized - The Electric Secondary Delivery System is considered stabilized when, following a disturbance, the system returns to the normal range of voltage and frequency for duration of five minutes.

Standard of Care - A term defining the level of awareness to maintain workplace and public safety in the design, installation and operation of facilities which generate power.

System Protection Facilities - The equipment required to protect Lafayette Utilities System's system and its other Customers' facilities from Unsafe Operating Conditions occurring at the Net Metering Customer's Renewable Energy Facilities. The protection requirements shall be met at the PCC, although the devices and functions providing the Protective Functions can be located elsewhere.

Unsafe Operating Conditions - A situation that if left uncorrected would result in: (1) harm to any personnel or damage to any equipment, (2) unacceptable system stability or, (3) operation outside established parameters affecting the Quality of Service to other Customers connected to the Electric Secondary Delivery System.

3.0 DETAILS

3.1 Available Voltage Systems

Lafayette Utilities System's Electric Secondary Delivery Systems available for parallel generation operations are of grounded wye or closed delta configurations. Generally, all secondary voltage levels from 120/240 V to 480 V single-phase or three-phase (except open-delta and open-wye) are available for Interconnection. Open-delta and open-wye secondary voltage configurations require special evaluation prior to Interconnection. The voltage level available for connecting the Customer's Renewable Energy Facility in parallel with the system depends on the desired location on Lafayette Utilities System's Electric Secondary Distribution System and the size of the Net Metering Customer's Renewable Energy Facility.

3.2 Reasons for Disconnection from the Electric Secondary Delivery System

Lafayette Utilities System may disconnect the Net Metering Customer's Renewable Energy Facilities from the Electric Secondary Delivery System under the following conditions:

- (1) Upon termination of the Interconnection Agreement;
- (2) Non-compliance of the Net Metering Customer's facility with any of the requirements in this document;
- (3) System emergency -
 - Lafayette Utilities System may temporarily disconnect a Net Metering Customer's facility without prior written notice in cases where continued Interconnection will endanger persons or property;
 - During the forced outage of the Electric Distribution System, Lafayette Utilities System shall have the right to temporarily disconnect a Net Metering

Customer's facility to make immediate repairs on the Electric Distribution System;

(4) During routine maintenance, repairs, and modifications to Lafayette Utilities System's Electric Distribution System;

(5) Lack of approved Interconnection Agreement –

In order to interconnect the Net Metering Customer's Renewable Energy Facility to Lafayette Utilities System's Electric Secondary Delivery System a Net Metering Customer must first submit to Lafayette Utilities System an executed Standard Interconnection Agreement for Net Metering. Lafayette Utilities System may refuse to connect or may disconnect the Net Metering Customer's facility if such agreement has not been received and approved.

When possible, Lafayette Utilities System will provide the Net Metering Customer with reasonable notice of disconnection and will reconnect the Net Metering Customer as quickly as reasonably practical.

3.3 Electrical Current and Voltage of Existing Service

Lafayette Utilities System shall ascertain if the proposed Renewable Energy Facility output exceeds the current carrying capability and matches the voltage of the existing secondary service wires and transformers. **Lafayette Utilities System will advise Customer of any Customer costs which may be incurred if upgrades are required and the voltage and load carrying ability of the existing service.**

3.4 System Changes

3.4.1 Lafayette Utilities System Changes to Electric Distribution System

The Electric Distribution System is a dynamic and changing system. If Lafayette Utilities System changes the distribution voltage, the Net Metering Customer will be responsible for paying for all modifications to the Net Metering Customer's facilities required for reconnecting to Lafayette Utilities System's reconfigured Electric Secondary Delivery System. Lafayette Utilities System will notify the Net Metering Customer of reconfiguration programs.

3.4.2 Net Metering Customer Changes to Interconnection

The Net Metering Customer shall notify Lafayette Utilities System (refer to Sec. 1.1 above for appropriate LUS representative) to obtain prior approval for any proposed modifications to the interconnecting scheme.

3.5 Allowable Tie Points

Normally, only one tie point between the Net Metering Customer's facilities and Lafayette Utilities System's Electric Secondary Delivery System will be allowed.

3.6 Energy Flow during Emergencies

Power flow from or to a Net Metering Customer's facilities during periods of system emergencies may be discontinued. Lafayette Utilities System shall pay for kWh actually received, not for Customer potential capacity.

3.7 Types of Allowed Generators

Single- or three-phase alternating current generating units may be operated in parallel with the Electric Secondary Delivery System. They may be synchronous generators, induction generators, or inverter-controlled systems. **Direct-current generation shall not be connected to Lafayette Utilities System's alternating-current Electric Secondary Delivery System.**

3.8 General Interconnection Requirements

The Net Metering Customer's Renewable Energy Facility shall meet the technical requirements as prescribed in this section, in IEEE 1547 and IEEE 1547.1 latest version.

3.8.1 Net Metering Customer's Equipment and Interconnection Standards

The Net Metering Customer's Renewable Energy Facilities and Interconnection installation must meet all applicable national, state, and local construction and safety codes. The Net Metering

Customer shall be responsible for the design, installation, operation and maintenance of all equipment and facilities installed or that will be installed on the Net Metering Customer's side of the PCC specified by the parties involved. Such design shall meet the latest standards of Institute of Electrical and Electronic Engineers, National Electric Manufacturers Association, American National Standards Institute, National Electric Code, other national codes and local codes pertaining to the design and construction of electrical facilities in effect at the time of installation. The facility shall be subject to the requirements of all authorities having jurisdiction and shall comply with all applicable codes and ordinances. **A visible opening 120/240V AC, General Duty, Non-Fusible, Single Throw, NEMA 3R disconnect which is accessible to and lockable by Lafayette Utilities System personnel at all hours without notice shall be furnished by the Customer and meet Lafayette Utilities System's specifications.** This disconnect shall be located within two (2) feet of the customer meter base and shall disconnect the Customer's Renewable Energy Facility from the Electric Distribution System. Contact Lafayette Utilities System for a list of approved vendors.

3.8.2 Rating of Net Metering Customer's Equipment

The equipment selected by the Net Metering Customer shall be rated for continuous Parallel Operation with Lafayette Utilities System's system. Renewable Energy Facilities that are intended to provide the Customer with power during periods when Lafayette Utilities System's facilities are unavailable shall be equipped with an automatic transfer switch to prevent energizing a non-energized Lafayette Utilities System Electric Secondary Delivery System consistent with sections 3.12.3 and 3.8.1 of this policy.

3.8.3 Protection of Net Metering Customer's Equipment

The Net Metering Customer will be responsible for protecting its facilities in such a manner that Electric Secondary Delivery System outages, short circuits or other disturbances, including zero sequence currents and ferroresonant over-voltages, do not damage the Net Metering Customer's facilities. The Net Metering Customer's protective equipment shall be installed to prevent the Renewable Energy Facility from causing unnecessary tripping of the Electric Distribution System breakers that would affect the Electric Distribution System's ability to provide reliable service to other Customers.

3.8.4 Required Drawings

Adequate drawings of the Net Metering Customer's proposed Renewable Energy Facility, which will include a one line diagram and proposed relay systems, must be submitted to Lafayette Utilities System for review during the planning stage. Additional drawings may be required on a case by case basis.

3.8.5 Changes to Lafayette Utilities System Facilities

The total cost of any additional equipment that must be installed by Lafayette Utilities System on its Electric Distribution System to allow Parallel Operation must be paid for by the Net Metering Customer, including the transformers and any facilities which must be added due to increased fault current or special operating conditions.

3.8.6 Power Factor

The power factor of the Customer Renewable Energy Facility at the PCC shall be according to the appropriate rate schedule for this installation. The presence of the Customer Renewable Energy Facility shall not cause the power factor to be lower than it was prior to installation and operation of the Customer Renewable Energy Facility.

3.8.7 Reactive Power Requirements

The Net Metering Customer's Renewable Energy Facility shall normally be responsible for supplying the facility's own reactive power as required by the load to which it supplies power.

3.8.8 Voltage Surges or Sags

The Net Metering Customer will operate its Renewable Energy Facility in such a manner that the voltage levels on the Electric Distribution System are in the same range (+5% or -5% from

nominal voltage) as if the facilities were not connected to Lafayette Utilities System’s system. The Net Metering Customer shall be responsible for any damages to the Net Metering Customer’s facilities, and shall be liable for any damages to Lafayette Utilities System’s facilities or the facilities of other Customers due to any under voltage or over voltage contribution from the Customer Renewable Energy Facility. The Customer shall provide an automatic method of disconnecting the generating equipment from the Electric Secondary Delivery System based upon the table below:

Voltage range (% of base voltage ^a)	Clearing times (seconds) ^b
V<50	0.16
50≤V<88	2.00
110<V<120	1.00
V≥120	0.16

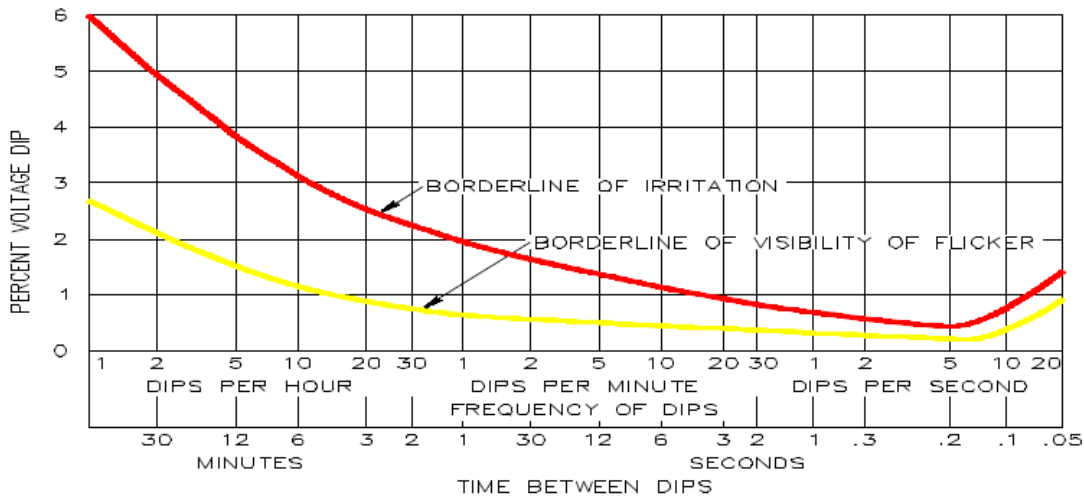
^a - Base voltages are the nominal system voltages stated in ANSI C84.1-1995, Table 1.

^b - DR ≤ 30 kW, maximum clearing times; DR > 30kW, default clearing times.

(Source IEEE Standard 1547-2003 Table 1)

3.8.9 Voltage Flicker

The Customer Renewable Energy Facility shall not create objectionable flicker for Lafayette Utilities System’s other Customers. As a guide to identifying objectionable flicker the “Border Line of Irritation” curve is included below. The creation of objectionable flicker shall result in disconnection by Lafayette Utilities System until such time that all objectionable flicker problems are corrected.



Flicker Chart. Source: IEEE Std. 141-1993 Figure 3-8

3.8.10 Frequency

When the operating frequency of the Customer’s generating equipment deviates from the 60 Hz base. The generating equipment shall be automatically disconnected from the Electric Secondary Delivery System based upon the table below:

Interconnection System Response to Abnormal Frequencies

DR size	Frequency range (Hz)	Time from beginning of event (seconds)
Less than or equal to 25kW	Greater than 60.5	0.16
	Less than 59.3	0.16
Greater than 25 kW	Greater than 60.5	0.16
	Less than 59.8 to 57	Adjustable 0.16 to 300 (consult Lafayette Utilities System)
	Less than 57.0	0.16

Lafayette Utilities System may require the Customer to wait up to five minutes to reconnect after the Electric Secondary Delivery System voltage and frequency return to normal range and the system is stabilized. Consult Lafayette Utilities System for details (refer to Sec. 1.1 above for the appropriate LUS representative). (IEEE 1547 4.2.6)

3.8.11 Harmonics

In accordance with IEEE 519 the total harmonic distortion (THD) voltage shall not exceed 5.0% of the fundamental 60 Hz frequency or 3.0% of the fundamental frequency for any individual harmonic when measured at the PCC.

3.9 Inspection Prior to Operations and Additional Requirements

Lafayette Utilities System reserves the right to impose any herein described but unmet requirements and to make subsequent final inspection before the Customer Renewable Energy Facility operates to verify that all such unmet requirements have been satisfied. However, Lafayette Utilities System has no actual or implied responsibility in this regard. The Net Metering Customer shall be responsible for making necessary changes, at the Net Metering Customer's expense; to the facility should such changes be required. Inspection by Lafayette Utilities System of the Net Metering Customer's equipment and Interconnection Facilities shall not constitute a determination by Lafayette Utilities System of the continuing suitability of such equipment and Interconnection. An inspection by Lafayette Utilities System shall in no way constitute a warranty or representation by Lafayette Utilities System against future negligence, misuse, faulty repairs, or subsequently developing defects, and Lafayette Utilities System assumes no responsibility or liability therefore.

3.10 Responsibility for Net Metering Customer's Operations

Lafayette Utilities System is not responsible for proper operations of the Net Metering Customer's Renewable Energy Facility upon and after Interconnection to Lafayette Utilities System's Electric Secondary Delivery System.

3.11 Responsibility for Net Metering Customer's Annual Maintenance

Annual maintenance of the Net Metering Customer's facility is the Net Metering Customer's sole responsibility. The Net Metering Customer shall maintain records of such maintenance activities, which Lafayette Utilities System may review at reasonable times. Such maintenance records shall be made available for Lafayette Utilities System's inspection upon request. Lafayette Utilities System reserves the right to inspect the records, but has no responsibilities for maintenance either actual or implied.

3.12 Protection/Interface Requirements

Protecting both the Net Metering Customer's facilities and Lafayette Utilities System's system are of great importance. Proper protective systems shall be established in the design phase and confirmed prior to start-up of the Net Metering Customer's Renewable Energy Facility. An Interconnection between Lafayette Utilities System and the Net Metering Customer will not be allowed prior to the proper coordination of protective devices. The Net Metering Customer shall be responsible for providing to Lafayette Utilities System the necessary documentation certifying that maintenance and testing have been satisfactorily performed.

3.12.1 Changes to Lafayette Utilities System Fault Interruption Equipment

Customer Renewable Energy Facilities that are installed on Lafayette Utilities System's Electric Secondary Delivery System will provide additional fault current to the Electric Distribution System. Thus, in special circumstances it is possible that the added facilities will necessitate the modification of the existing fault interrupting devices on the distribution feeder. The Net Metering Customer will be responsible for paying the cost of these changes to Lafayette Utilities System's system. It is also possible that the added facilities will increase the available fault current on the Electric Distribution System beyond the interrupting capability of the existing devices on the Electric Distribution System. The Net Metering Customer may be required to limit the fault current contribution from the Customer Renewable Energy Facility. Should Lafayette Utilities System also

be required to make changes, the Net Metering Customer shall pay the cost of the required changes. The issues will be examined on a case-by-case basis.

3.12.2 Tests of the Net Metering Customer's Equipment

Lafayette Utilities System reserves the right, but has no responsibility either actual or implied, to observe the Net Metering Customer's tests and/or inspection of any of the Net Metering Customer's protective equipment that is essential to the Interconnection, including relays, circuit breakers, protective devices and related equipment. Inspection may include simulated test tripping of the Net Metering Customer's Interconnection breakers by the protective relays to verify all protective set points and relay/breaker trip timing prior to Interconnection to Lafayette Utilities System system. Inspection by Lafayette Utilities System of the Net Metering Customer's equipment and Interconnection Facilities shall not constitute a determination by Lafayette Utilities System of the continuing suitability of such equipment and Interconnection. An inspection by Lafayette Utilities System shall in no way constitute a warranty or representation by Lafayette Utilities System against future negligence, misuse, faulty repairs, or subsequently developing defects, and Lafayette Utilities System assumes no responsibility or liability therefore. The Net Metering Customer shall provide Lafayette Utilities System with notice at least two weeks before the initial energizing and start-up testing of the Net Metering Customer's facilities so that Lafayette Utilities System may witness the testing of any equipment and protective systems associated with the Interconnection. If upon connecting to Lafayette Utilities System's system a system emergency develops, safety issues arise, or the Quality of Service to other Customers is affected, Lafayette Utilities System may then require additional inspections or tests of the Net Metering Customer's protective equipment as per IEEE 1547 and IEEE 1547.1, latest version.

3.12.3 Requirements for Specific Technologies

Various technologies require unique control, protection, and safety equipment to be installed. The specifications in this section list those requirements unique to the technologies.

3.12.3.1 Induction Generators and Inverter Systems

Induction generation may be connected and brought up to synchronous speed (as an induction motor) if it can be demonstrated that the initial voltage drop measured on the Electric Secondary Delivery System side of the PCC is within the allowable visible flicker standard in Section 3.8.9. Otherwise, the Net Metering Customer may be required to install hardware or employ other techniques to bring voltage fluctuations to acceptable levels. Self-commutated inverters whether of the utility-interactive type or stand-alone type shall be used in parallel with the Electric Secondary Delivery System only with synchronizing equipment. Line-commutated inverters do not require synchronizing equipment. For Customer Renewable Energy Facilities using a line commutated inverter system, no other fault-interrupting device is required. The inverter interrupts the fault.

3.13 Susceptibility to Transmission Faults

Faults, single-phasing events, or other Abnormal Operating Conditions occurring on the Lafayette Utilities System's transmission system could affect a Net Metering Customer's facilities connected to Lafayette Utilities System's Electric Secondary Delivery System. It is the Net Metering Customer's responsibility to protect the Net Metering Customer's facilities from these conditions.

3.14 Synchronizing Requirements

The Net Metering Customer shall be solely responsible for synchronizing and properly connecting and disconnecting its electrical system relative to Parallel Operation with Lafayette Utilities System's system. The Net Metering Customer shall provide an automatic synchronizing scheme to prevent the closing of its circuit breaker when the two electrical systems are out of synchronism. **The Net Metering Customer's Renewable Energy Facility should be automatically disconnected from Lafayette Utilities System's Electric Distribution System if it does not meet the requirements of 3.8.8 and 3.8.10.**

3.15 Metering Requirements

Based on Lafayette Utilities System's standard practices, Lafayette Utilities System will provide the meter base. The meter bases are issued from 1314 Walker Road from 7:00am to 3:30 pm weekdays. Lafayette Utilities System will supply the special meter that will measure the Net Metering Customer's energy flow. For additional information on interconnection rates see Lafayette Utilities System's website. Go to "Your Home", Rates & Reliability", then "Electric". Lafayette Utilities System's standard deposit requirements for service will apply for net metering service. For additional information regarding deposits, please go to the Lafayette Utilities System website – www.lus.org. Go to "Your Home", then "Customer Service". The Net Metering Customer will be required to provide Lafayette Utilities System with information regarding the total connected load. The Net Metering Customer may be required to provide and / or install the meter socket, metering transformer enclosure, and adequate attachments or devices for attaching Lafayette Utilities System's metering facilities to the building. Lafayette Utilities System reserves the right to install a meter to measure the actual power generated by the Customer's Renewable Energy Facility. The cost of the meter and its installation shall be born by the customer. For additional information see Lafayette Utilities System's website www.lus.org. Go to "Your Business", "Developers and Builders", then "Development Guidelines".

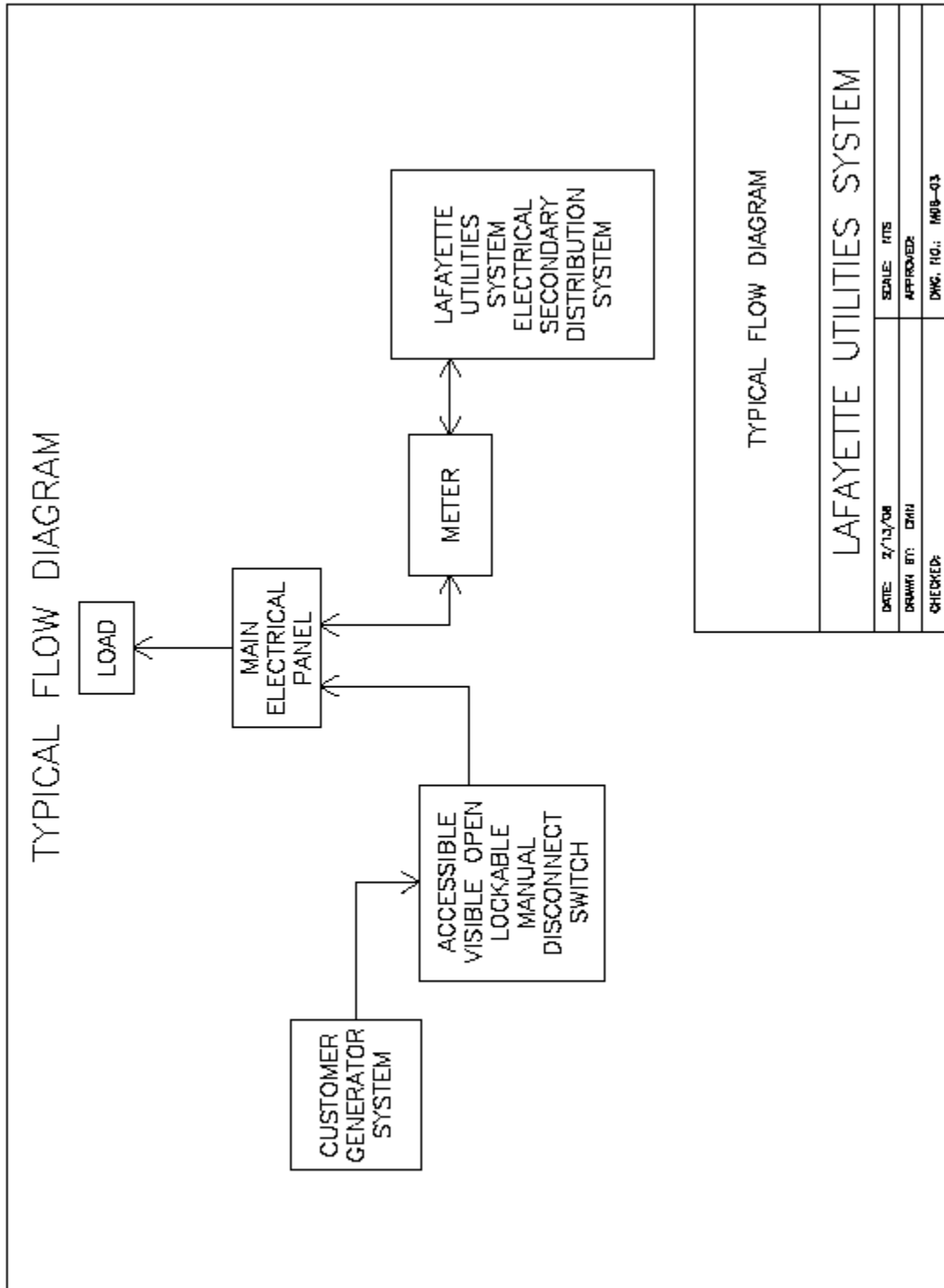
3.16 Standard Interconnection Agreement Requirements

A written agreement will be required between Lafayette Utilities System and the Net Metering Customer specifying the liability provisions, indemnities, terms of payment of cost to modify Electric Distribution System (if not paid in advance), and other items affecting service under this document. This agreement will explain in detail the authority or responsibilities of the parties involved. **An Interconnection between Lafayette Utilities System's Electric Secondary Delivery System and a Net Metering Customer's Renewable Energy Facility will not be allowed prior to the execution of a written Standard Interconnection Agreement for Net Metering Facilities.** The Customer shall submit a Standard Interconnection Agreement to Lafayette Utilities System at least forty-five (45) days prior to the date the Customer intends to interconnect the Renewable Energy Facility to the Lafayette Utilities System Electric Secondary Delivery System. Part I, Standard information, Sections 1 through 4 of the Standard Interconnection Agreement must be completed for the notification to be valid. The Customer shall have all equipment necessary to complete the interconnection prior to such notification. If mailed, the date of notification shall be the third day following the mailing of the Standard Interconnection agreement. The net metering Customer will be required to provide documentation indicating the date upon which the notification was mailed to Lafayette Utilities System. Lafayette Utilities System shall provide a copy of the Standard Interconnection Agreement to the customer upon request. For additional information, see the Net Metering section of the Lafayette Utilities System website at www.lus.org. Go to "Our Environment", then "Net Metering"

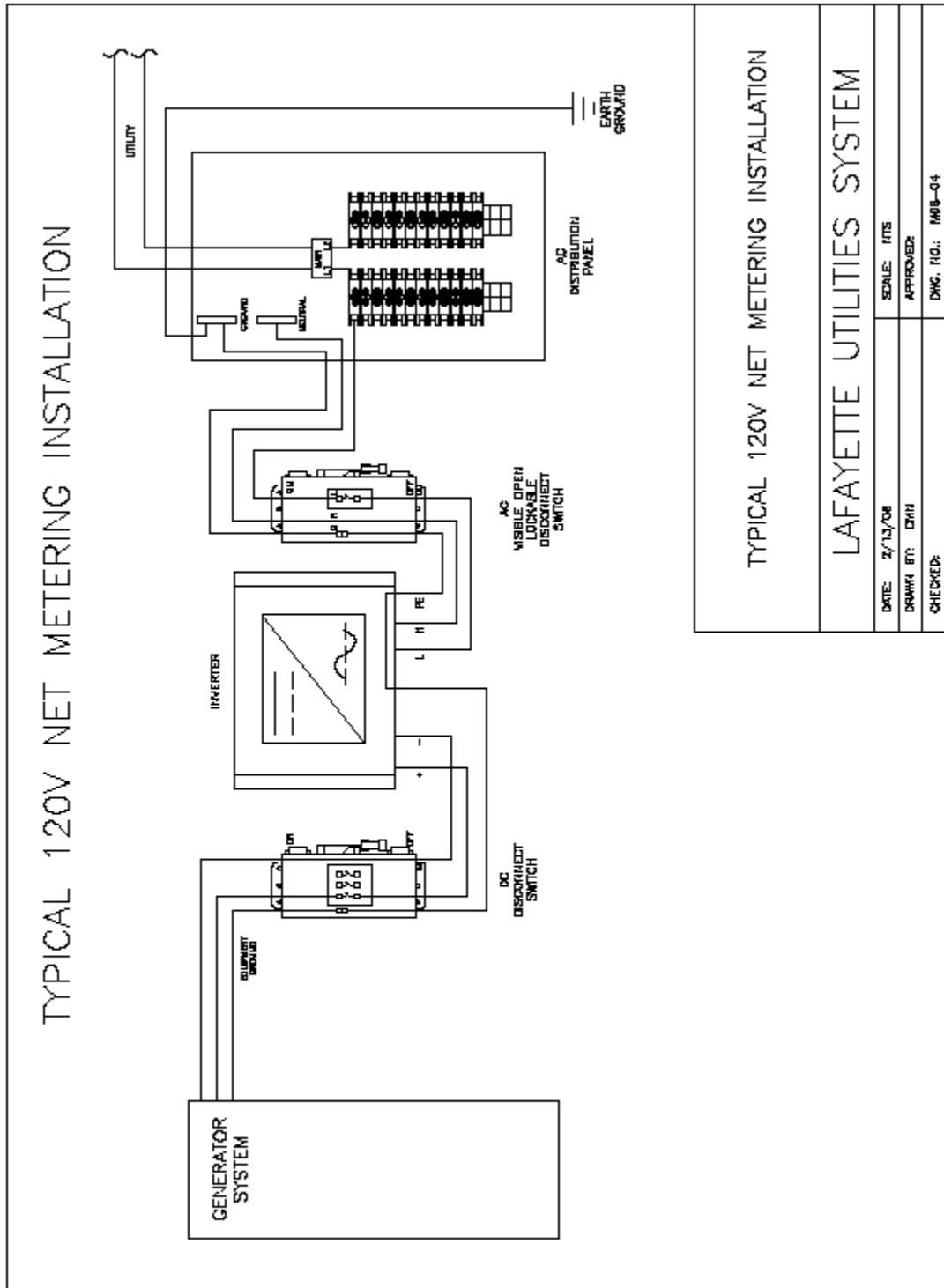
4.0 REFERENCES

IEEE Guide for Protective Relaying of Utility-Consumer Interconnection C37.95 (Latest revision)
IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems, 519-1992
IEEE Recommended Practice for Electric Power Distribution for Industrial Plants, 141-1993
IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems 1547
IEEE Standard Conformance for Test Procedures for Interconnecting Distributed Resources with Electric Power Systems 1547.1

5.0: NET METERING FLOW SHEETS AND DIAGRAMS



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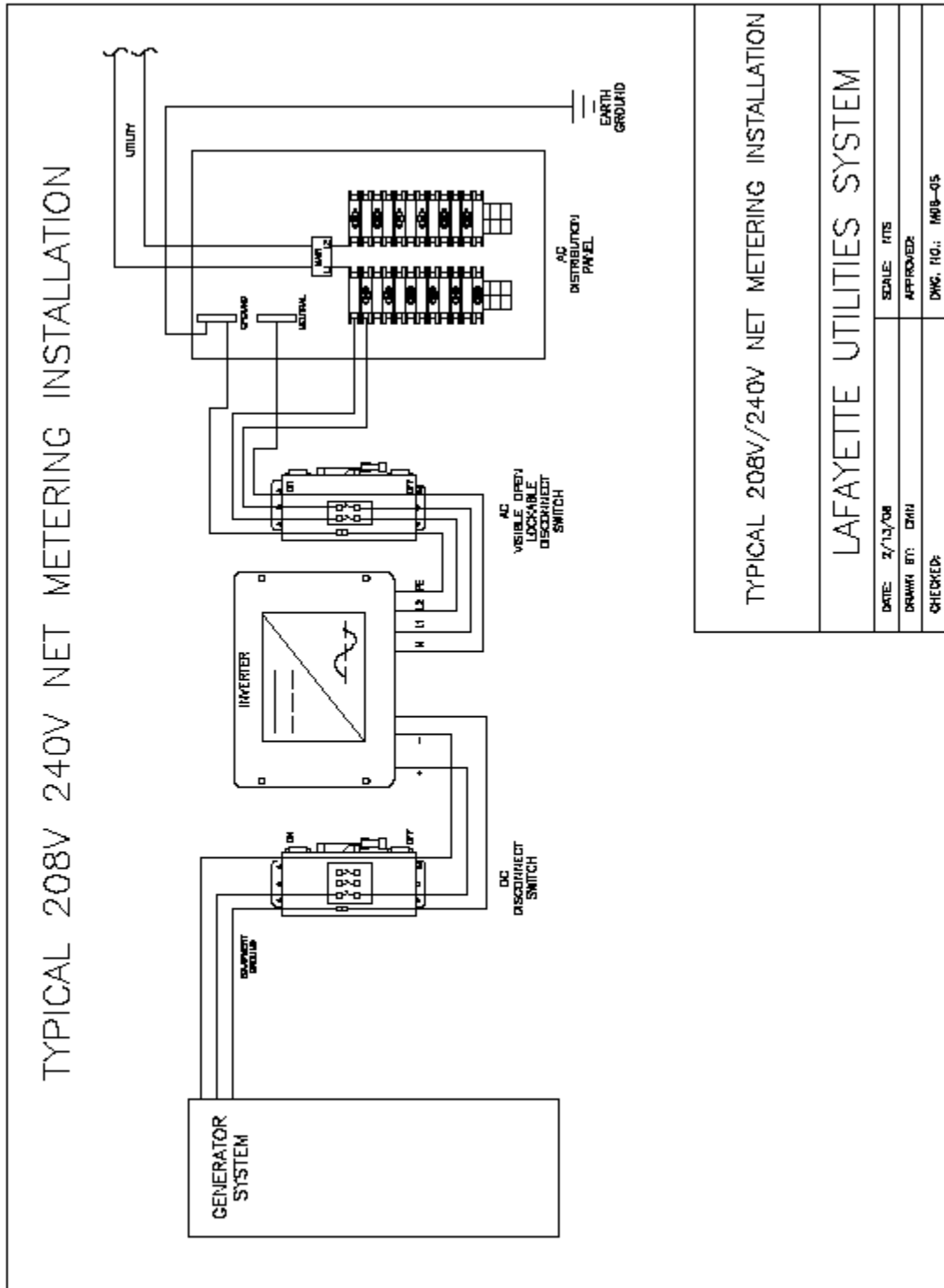


TYPICAL 120V NET METERING INSTALLATION

LAFAYETTE UTILITIES SYSTEM

DATE: 2/13/08	SCALE: NTS
DRAWN BY: CMH	APPROVED:
CHECKED:	DWG. NO.: M08-04

5.0: NET METERING FLOW SHEETS AND DIAGRAMS



TYPICAL 208V/240V NET METERING INSTALLATION

LAFAYETTE UTILITIES SYSTEM

DATE: 2/13/08	SCALE: NTS
DRAWN BY: CMH	APPROVED:
CHECKED:	DWG. NO.: M08-05