



Rule 21 Appendix B

Large Facility Interconnection Agreement

(Generating Facilities larger than 100 kW connecting to FEUS distribution system)

FEUS will authorize the interconnection of any photovoltaic, or other qualifying renewable resource, generating system rated larger than 100 kilowatts that complies with FEUS' Interconnection Requirements as stated in Rule 21.

I. APPLICATION REQUIREMENTS

- A. Request an application from FEUS personnel located at 101 North Browning Parkway in Farmington or call 505.599.8310.
- B. When the project plans are finalized, complete the application for interconnection and return it along with the \$500 application fee to FEUS using the address above. The application will also need to include all documentation and data listed in this section.
- C. FEUS will perform all required studies for interconnection at the Customer's expense.
- D. FEUS will not process or approve projects without finalized project plans.
- E. The one-line electrical diagram and the site diagram, which are critical components of the application for interconnection, will become part of the Interconnection Agreement. Deficiencies in the one-line diagram and site drawing are the most common cause for delays in FEUS' review and approval of an application for interconnection.
- F. A site drawing or location plan identifying location of equipment noted on the one-line diagram must be submitted, in addition, with the following details:
 1. Customer name, installation address, installer name, and contact information.
 2. Building, streets, nautical direction, and GPS coordinates.
 3. Additional detail or plan views may be required to clearly show location of meters, main service, and customer generation disconnect (i.e., interior or exterior wall, etc.).
 4. Distance between equipment. This is particularly important for installations where the customer generation disconnect switch is not located adjacent to the FEUS metering point.
 5. Include location of new and existing systems.
- G. The system one-line diagram must identify all major equipment and mention all relevant details including:
 1. Customer name, installation address, installer name, and contact information.
 2. All Switches including customer generation disconnect switch, breakers, fuses, junction boxes, combiner boxes, electric, protective devices, etc. in the electrical circuit from the main service meter to the Generating Facility.
 3. Main service meter and main service panel.
 4. Generating Facility components – PV panels, inverters, wind turbines etc.
 5. Clear identification of electrical ratings of all equipment (volts, amps, kW etc.).
 6. If applicable, clear identification of new and existing Generating Facility

- H. If there are any questions or concerns about the application or about the interconnection plans, FEUS will contact the Customer or their contractor for clarification to resolve the interconnection concerns. If the application is complete and the interconnection plans are acceptable, FEUS will approve the interconnection design.
- I. To avoid unnecessary cost and delay, it is recommended that FEUS' approval of the final interconnection design be obtained prior to purchasing material or equipment for the project.
- J. A copy of the Generating Facility manufacturer specification sheet must be submitted. For PV inverters, the specifications must list UL-1741 certification.
- K. After the application has been approved and all interconnection requirements are identified, FEUS will send the Customer two originals of the standard form Interconnection Agreement. Both originals of this agreement will need to be signed by the FEUS Customer/generator owner who is requesting the interconnection. The Customer will then return both of the signed originals to FEUS for FEUS' signature.
- L. FEUS will execute the Interconnection Agreement when all inspections are complete and the Generating Facility has been authorized to commence interconnected operation. FEUS will return one of the fully executed agreements to the Customer/generator owner.
- M. The Generating Facility shall not be operated in parallel with FEUS' system without FEUS' written authorization to do so.

II. GENERAL DESIGN REQUIREMENTS

General requirements for a successful interconnection with FEUS system are listed below:

- A. Systems that interconnect by means of an inverter that is UL 1741 compliant meet State and FEUS requirements.
- B. Interconnected systems must comply with all applicable building and electrical codes.
- C. FEUS requires that a utility-accessible, lockable load-break disconnect switch be installed between the output of the Generating Facility and the point of interconnection. This switch will be called the Generating Facility disconnect switch. This disconnect switch may be operated and controlled by FEUS, must provide a verifiable, visible air gap between the Generating Facility and the point of interconnection. Circuit breakers and inverter software modes do not meet the visible disconnect switch requirement.
- D. Labeling requirements:
 - 1. Labels shall be weather proof, durable and permanently mounted.
 - 2. Demonstrate compliance with NEC.
 - 3. Include label on Main Service Meter, "Generation System Connected," or similar.
 - 4. Include label on customer generation disconnect switch, "Customer Generation Disconnect Switch."

III. OPERATIONAL REQUIREMENTS

All Customers with generation over 100 kW, irrespective of the type of generating resource, shall provide the following:

- A. Voice communication to the facility via public telephone lines or mutually agreed circuits.
- B. Name and telephone number of the designated operating agent.
- C. Familiarity by their designated operating agent and other operating personnel with line clearance / operating procedure.
- D. Notification to FEUS' control center prior to bringing the unit on line with system and time of interconnection.
- E. Notification to FEUS' control center of time of removal from the FEUS system.
- F. Telemetry to furnish hourly kWh generation to FEUS' control center (See Section III-G below).
- G. The design purchase installation, testing, maintenance and replacement of the telemetry equipment and circuits from the Customer's facility to FEUS' control center will be the responsibility of FEUS or their designated representative. The direct costs will be charged to the Customer.

IV. TESTING AND INSPECTION REQUIREMENTS

- A. After construction of the generating system is complete and after it has received the final electric inspection from the local building code authority, the Customer or their contractor will need to contact FEUS for an interconnection approval inspection. The purpose of the FEUS inspection will be:
 - 1. To verify that the facility has been constructed as it is represented in the application and in the Interconnection Agreement.
 - 2. To verify that the anti-islanding protection of the inverter is operational.
 - 3. To install permanent warning signs and to verify that a permanent, weatherproof copy of the one-line diagram and a site drawing have been installed at the point of the metering.
- B. FEUS personnel must verify the anti-islanding operation of the inverter.
- C. A permanent, weatherproof one-line diagram or sketch of the system must be installed at the FEUS point of service.
- D. After the interconnection has passed FEUS' inspection, FEUS will provide written authorization for the Customer to commence interconnected operations. The written authorization to commence interconnected operation is an attachment to the fully executed Interconnection Agreement.
- E. FEUS interconnection inspections can usually be scheduled within 10 working days of receiving a request.

V. INDEMNIFICATION

The Customer shall indemnify and hold FEUS harmless for all damages and injuries to FEUS or others arising out of Customer’s use, ownership or operations of Customer’s facilities and caused in whole or in part by Customer’s negligence. Customer is solely responsible for providing adequate protection for Customer’s facilities operating in parallel with FEUS’ system and shall release FEUS from any liability for damages or damages and injuries to Customer’s facilities arising out of such parallel operation unless cause solely by FEUS’ negligence. The Customer shall indemnify and hold FEUS harmless from any liability for damages to FEUS or others arising out of the mis-operation or malfunction of Customer-owned facilities. Customers shall be required to maintain in- force liability insurance in an amount sufficient to satisfy reasonably foreseeable indemnity obligations and shall name FEUS as an additional insured under said insurance policy.

VI. WAIVER

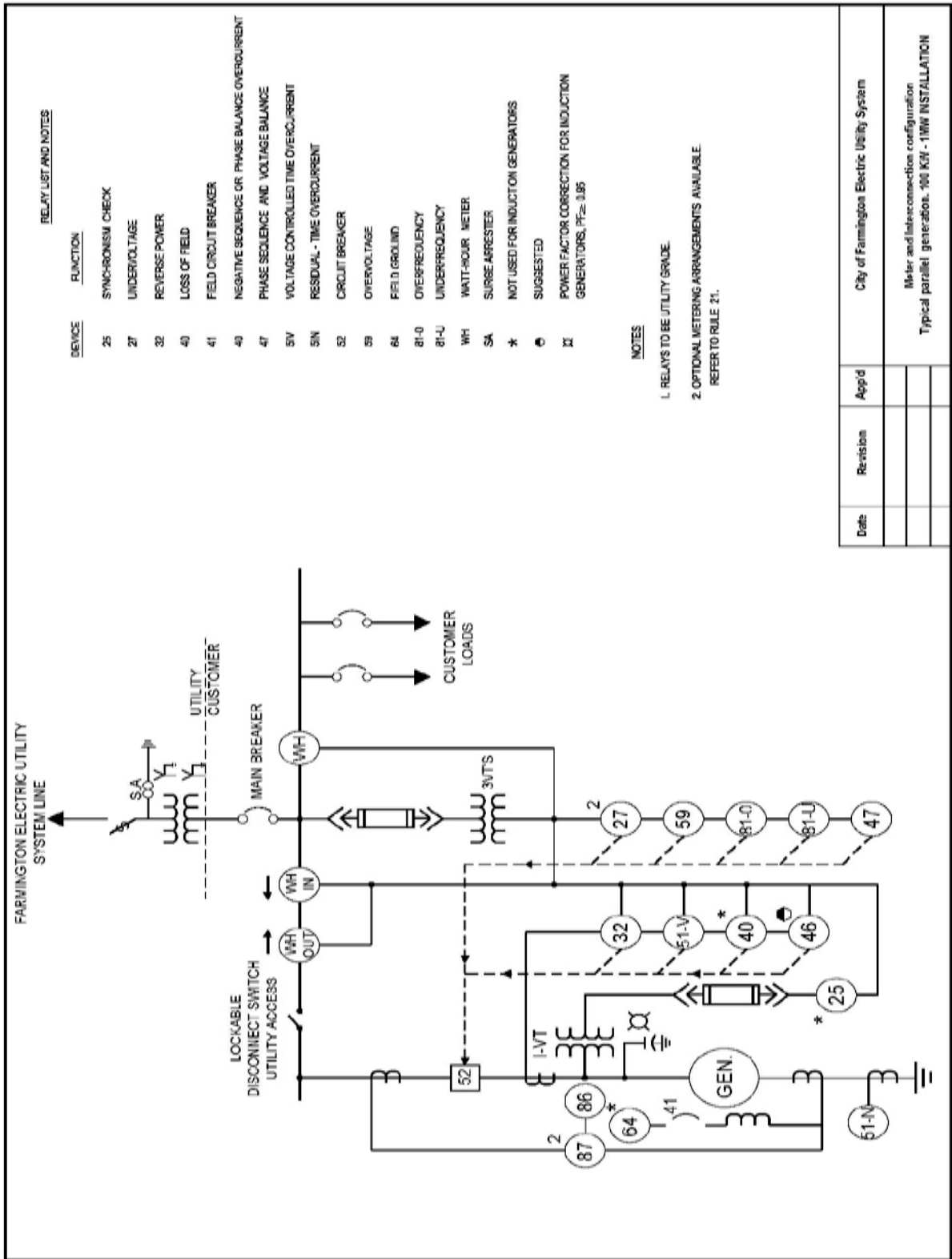
I also agree to waive any demand, claim or suit seeking damages to my generation facilities, electric equipment or bodily injury to myself or other caused by the interconnection of my system to FEUS, including damages or injury caused by the negligence of FEUS employees or agents or the malfunction of FEUS equipment. In addition, I agree to hold FEUS harmless from any demand, claim or suit arising out of any damage to any third party relating to the interconnection of my system and FEUS not caused by the negligence of FEUS or its employees or agents.

VII. AGREEMENT

I, _____, agree to abide by these interconnection guidelines and Rule 21 as currently written or revised in the future.

Owner

Date



RELAY LIST AND NOTES

| DEVICE | FUNCTION |
|--------|---|
| 25 | SYNCHRONISM CHECK |
| 27 | UNDERVOLTAGE |
| 32 | REVERSE POWER |
| 40 | LOSS OF FIELD |
| 41 | FIELD CIRCUIT BREAKER |
| 46 | NEGATIVE SEQUENCE OR PHASE BALANCE OVERCURRENT |
| 47 | PHASE SEQUENCE AND VOLTAGE BALANCE |
| 51-V | VOLTAGE CONTROLLED TIME OVERCURRENT |
| 59 | RESIDUAL - TIME OVERCURRENT |
| 81-0 | CIRCUIT BREAKER |
| 81-U | OVERVOLTAGE |
| 86 | FIELD GROUND |
| 87-0 | OVERFREQUENCY |
| 81-U | UNDERFREQUENCY |
| WH | WATT-HOUR METER |
| SA | SURGE ARRESTER |
| * | NOT USED FOR INDUCTION GENERATORS |
| o | SUGGESTED |
| II | POWER FACTOR CORRECTION FOR INDUCTION GENERATORS, P _F ≥ 0.95 |

NOTES

1. RELAYS TO BE UTILITY GRADE.
2. OPTIONAL METERING ARRANGEMENTS AVAILABLE. REFER TO RULE 21.

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|------|----------|-------|--|
| Date | Revision | App'd | City of Farmington Electric Utility System |
| | | | |
| | | | Meter and interconnection configuration |
| | | | Typical parallel generation, 100 KW - 1MW INSTALLATION |