Southwest Electric

Application for Interconnection of Distributed Generation

Tier 1 – 15 kW or less (Residential installation limited to 15 kW)

See Your Electric Distributor's Website for DG Application Submission and Contact information.

PARTICIPANT ***(Note: Qualified Installers Required per NEC 690.4C)***

Name: (As listed on electric utility bill) _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

E-Mail Address: _____

Electric Service Account Number: _____

Owner of Building if different from Participant: _____

CONTACT (if different from Participant)

Name: (As listed on electric utility bill) _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

E-Mail Address: _____

OWNER OF SYSTEM (If different from Participant)

Name: (As listed on electric utility bill) _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

E-Mail Address: _____

INSTALLER ***(Note: Qualified Installers Required per NEC 690.4C)***

Company: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Representative: _____

E-Mail Address: _____

Contractor's License # _____ City/County/State _____

GENERATING FACILITY INFORMATION

Generator Type: Solar ____ Wind ____ Other (describe) _____

Nominal AC Voltage (Volts): _____

Generator or Inverter Manufacturer: _____ Model_____

Generator or Inverter Peak AC Output Power Rating (peak kWAC) _____

Total Number of Generators or Inverters per Project / System: _____/_____

Total AC Design Output Power (peak kWAC) per Project / System: _____/_____

Grid Interactive Battery Manufacturer: _____ Model_____

Total Grid Interactive Battery AC Design Power (kWAC) per Project / System: _____/_____

Solar Panel Manufacturer: _____ Model_____

Solar Panel Maximum Power (Wdc) per Project / System _____/_____

Number of Panels per Project / System _____/_____

Total DC Design Capacity per Project / System (kWdc) _____/_____

Estimated Installation Date: _____ Estimated In-Service Date: _____

List components of the Small Generating Facility equipment package that are currently certified:

	Equipment Type	Certifying Entity – Default Grid Code Setting
1.	_____	_____
2.	_____	_____

Electric Cooperative will specify the allowable grid interactive setting(s) and the required labeling.

ADDITIONAL INFORMATION – Single Line Diagram

In addition to the items listed above, please attach a detailed one-line diagram of the proposed facility including design AC and DC capacities, utility required labeling and participant information, all applicable elementary diagrams, major equipment, (generators, transformers, inverters, circuit breakers, protective relays, batteries, number and location of PV Panels, etc.) specifications, test reports, etc., and any other applicable drawings or documents necessary for the proper design of the interconnection.

Permission to Interconnect

Participant must not operate their generating facility in parallel with Distributor's system until written authorization for interconnection and parallel operation has been received from Distributor. Unauthorized parallel operation could result in injury to persons and /or damage to equipment and/or property for which the customer may be liable.

Interconnection Participant Signature

I hereby certify that I have provided true information in this Application, and that I have read the *Electric Cooperative Interconnection Procedures for Cooperative – Member Distributed Generation Program For Generating Facilities Rated 2 MW (2,000 kW) and Less (the "Procedures"), attached hereto as Exhibit A and incorporated herein*, and to the best of my knowledge, my generating facility is in compliance with the Procedures.

Participant Signature: _____ Date: _____

(Name as listed on electric utility bill)

Southwest Electric

Application for Interconnection of Distributed Generation

Tier 2 (Greater than 15 kW and less than or equal to 100kW) & Tier 3 (Greater than 100 kW and less than or equal to 2MW)

Complete Application, Agreement and One-Line Required for Each Metered Service
See Your Electric Distributor's Website for DG Application Submission and Contact information.

PARTICIPANT ***(Note: Qualified Installers Required per NEC 690.4C)***

Name: (As listed on electric utility bill) _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Representative: _____

E-Mail Address: _____

Electric Service Account Number: _____

Owner of Building if different from customer _____

OWNER OF SYSTEM (if different from Participant)

Company: _____ Representative: _____

Address: _____City/State/Zip:_____

Telephone: _____ E-Mail Address: _____

PROJECT DESIGN /ENGINEERING (as applicable)

Company: _____ PE License: _____ State: _____

Address: _____

City: _____ County: _____ State: _____ Zip: _____

Telephone: _____ Representative: _____

E-Mail Address: _____

INSTALLER ***(Note: Qualified Installers Required per NEC 690.4C)***

Company: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ Representative: _____

E-Mail Address: _____

Contractor's License # _____ City/County/State _____

ESTIMATED LOAD AND GENERATOR RATING INFORMATION (Per Meter)

Generator Type: Solar ____ Wind ____ Other (describe) _____

Total Site-Meter Load: _____ (Highest kWAC Demand Last 12 Months)

Total AC Design Output Power (peak kWAC) per Project / System: _____/_____

Total Annual Estimated Generation (annual kWh) per Project / System: _____/_____

Total Grid Interactive Battery AC Design Capacity (kWAC) per Project / System: _____/_____

INVERTER DATA

Manufacturer: _____ Model: _____

Inverter Peak AC Output Power Rating (peak kWAC) _____

Total Number of Inverters: _____ Date of Manufacture: _____

Total System Peak AC Design Output Power (peak kWAC): _____

Rated Power Factor (%): _____Rated Voltage (Volts): _____ Rated Amperes: _____

Inverter Type (ferroresonant, step, pulse-width modulation, etc): _____

Single or Three Phase: _____

Harmonic Distortion: Maximum Single Harmonic (%) _____ Maximum Total Harmonic (%) _____

Provide the manufacturer's list of available grid settings (Default/Standard and Programmable) for inverter based systems. Electric Cooperative will specify the allowable grid interactive setting(s) and the required labeling.

SOLAR PANEL DATA

Solar Panel Manufacturer: _____ Model_____

Solar Panel Maximum Power (Wdc) per Project / System _____/_____

Number of Panels per Project / System _____/_____

Total DC Design Capacity per Project / System (kWdc) _____/_____

SYNCHRONOUS GENERATOR DATA

Identification per Single Line Drawing: _____

Total number of units with listed specifications on site: _____

Manufacturer: _____ Serial Number (each):_____

Type: _____Date of manufacture: _____

Phases: Single_____ Three_____ R.P.M.: _____ Frequency (Hz): _____

Rated Output (for one unit): _____Kilowatt _____Kilovolt-Ampere

Rated Power Factor (%): _____Rated Voltage (Volts): _____Rated Amperes: _____

Field Volts: _____ Field Amps: _____ Motoring power (kW): _____

Synchronous Reactance (Xd): _____% on _____KVA base

Transient Reactance (X'd): _____% on _____KVA base

Negative Sequence Reactance (Xs): _____% on _____KVA base

Sequence Reactance (Xo): _____% on _____KVA base

Neutral Grounding Resistor Size (if applicable):_____

I22t or K (heating time constant): _____

INDUCTION GENERATOR DATA

Rotor Resistance (Rr):_____ ohms Stator Resistance (Rs): _____ ohms

Rotor Reactance (Xr):_____ ohms Stator Reactance (Xs): _____ ohms

Magnetizing Reactance (Xm):_____ ohms Short Circuit Reactance (Xd"): _____ ohms

Design letter:_____ Frame Size: _____

Exciting Current:_____ Temp Rise (deg C°): _____

Reactive Power Required:_____ Vars (no load), _____

Vars (full load) Additional information:_____

PRIME MOVER (Complete all applicable items)

Identification per Single Line Diagram _____ Unit Number: _____

Type: _____

Manufacturer: _____

Serial Number:_____ Date of manufacture: _____

H.P. Rated: _____ H.P. Max.: _____Inertia Constant: _____ lb.-ft.^{2}

Energy Source (hydro, wind, etc.) _____

POWER CIRCUIT BREAKER

Manufacturer: _____Model: _____

Rated Voltage (*kilovolts):* _____Rated ampacity *(Amperes)*_____

Interrupting rating (Amperes): _____BIL Rating: _____

Interrupting medium / insulating medium (ex. Vacuum, gas, oil) _____ / _____

Control Voltage (Closing _____ (Volts) AC DC

Control Voltage (Tripping): _____ (Volts) AC DC Battery Charged Capacitor

Close energy: Spring Motor Hydraulic Pneumatic Other: _____

Trip energy: Spring Motor Hydraulic Pneumatic Other: _____

Bushing Current Transformers: _____ (Max. ratio) Relay Accuracy Class: _____

Multi ratio? No Yes: (Available taps) _____

Description of Control System _____

ADDITIONAL INFORMATION – Single Line Diagram

In addition to the items listed above, please attach a detailed one-line diagram of the proposed facility including design AC and DC capacities, utility required labeling and participant name, all applicable elementary diagrams, major equipment, (generators, transformers, inverters, circuit breakers, protective relays, batteries, number and location of PV Panels, etc.) specifications, test reports, etc., and any other applicable drawings or documents necessary for the proper design of the interconnection. Also describe the address or grid coordinates of the facility.

PERMISSION TO INTERCONNECT

Participant must not operate their generating facility in parallel with Distributor's system until written authorization for interconnection and parallel operation has been received from Distributor. Unauthorized parallel operation could result in injury to persons and /or damage to equipment and/or property for which the customer may be liable.

SIGN OFF AREA

The Participant agrees to provide Distributor with any additional information required to complete the interconnection.

I hereby certify that I have provided true information in this Application, and that I have read the *Electric Cooperative Interconnection Procedures for Cooperative – Member Distributed Generation Program For Generating Facilities Rated 2 MW (2,000 kW) and Less (the "Procedures"), attached hereto as Exhibit A and incorporated herein,* and to the best of my knowledge, my generating facility is in compliance with the Procedures.

Participant Signature: _____ Date: _____

(Name as listed on electric utility bill)

END OF TIER 2 & TIER 3

DISTRIBUTOR CONTACT FOR APPLICATION SUBMISSION AND FOR MORE INFORMATION:

Distributor: _____

Title: _____

Address: _____

_____

_____

Website _____

Phone: _____

E-mail: _____

EXHIBIT A

ELECTRIC COOPERATIVE

INTERCONNECTION PROCEDURES

FOR

COOPERATIVE - MEMBER

DISTRIBUTED GENERATION

PROGRAM

For Generating Facilities Rated 2 MW (2,000 kW) and Less

Version 1-1-2022

1. GENERAL PROCEDURES & STANDARDS

1.1. Scope

The procedures below ("Interconnection Procedures") describe the steps a member-consumer applying to participate in the Cooperative – Member Distributed Generation Program ("Participant") must follow in order for their proposed distributed generation equipment ("DG Equipment") to be evaluated and approved for parallel operation and interconnection to the distribution system of your electric provider ("Distributor"). Requirements for interconnection will be based on the size of the system and will be broken into the following categories:

Tier 1 – 15 kW or less; (Residential installation limited to 15 kW)
Tier 2 – Greater than 15 kW and less than or equal to 100 kW; or
Tier 3 – Greater than 100 kW and less than or equal to 2 MW.

1.2. Application for Interconnection

Each Participant must submit a completed **Application for Interconnection of Distributed Generation** ("Application") to Distributor prior to purchasing any DG Equipment.

1.2.1. If the residential or non-residential DG Equipment meets the criteria for Tier 1, complete the Tier 1 application.

1.2.2. If the non-residential DG Equipment meets the criteria for Tier 2 or Tier 3, complete the application for Tier 2 or Tier 3.

1.2.3. Participant is required to provide the supporting documents listed in the respective Application for Interconnection of Distributed Generation.

1.3. Application Processing (See Figure 1)

Participant will not be allowed to interconnect and operate in parallel their DG Equipment with the distribution system Distributor until all provisions of these procedures have been met and Distributor has given WRITTEN NOTIFICATION to proceed with interconnection and parallel operation.

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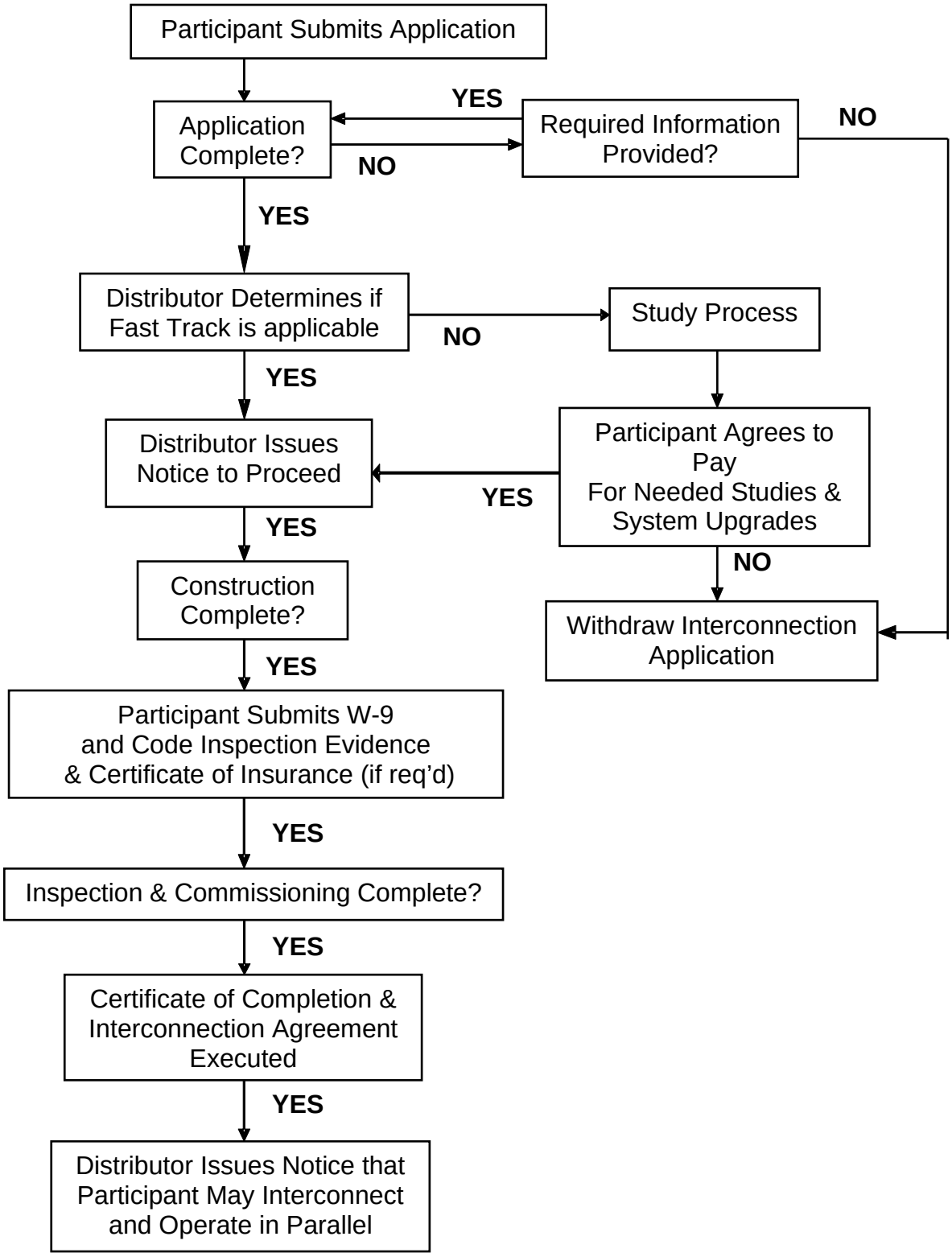

Figure 1. The Application Process

1.3.1. Participant will submit a completed Application to Distributor. Distributor will review the Application for sufficiency and completeness and notify the Participant within 10 business days of receipt of Application that Participant has provided all documents required or indicate how the Application submittal is deficient.

1.3.2. Within 15 business days of notifying Participant that the Application is complete, Distributor will evaluate the system using the criteria of Section 2, Fast Track Screening Process, to determine if an interconnection study is necessary. If the project does not pass the Fast Track Screening Process, the requirements outlined in Section 3, Study Process, will be followed. If the project passes the Fast Track Screening Process or meets the criteria for installation and interconnection under the Study Process, it will be classified as a Qualifying System ("Qualifying System") and Distributor will notify the Participant in writing that Participant may proceed with installation of the Qualifying System.

1.3.3. Upon completing installation of the Qualifying System, the Participant will notify the Distributor the installation has been completed. Prior to authorization of interconnection and parallel operation, representatives of Distributor and/or Cooperative Energy ("Supplier") may inspect the Qualifying System for compliance with the proposed design and may require witnessing of a Commissioning Test in accordance with the procedures defined by the latest version of IEEE 1547.1. Whether or not Distributor and/or Supplier elect to witness the Commissioning Tests, Participant will provide Distributor with the schedule for, and results of, all applicable Commissioning tests as well as testing information and results required in Section 3 of these Interconnection Procedures, or that are required in the Interconnection and Parallel Operation Agreement for Distributed Generation Rated 2 MW or Less ("Interconnection Agreement"). All testing information and results will be given to Distributor prior to or at the time of the Final Inspection of the Qualifying System.

1.3.4. An installed system must satisfactorily pass any required inspections and/or required Commissioning Test(s), or be waived by Distributor, prior to the Interconnection Agreement execution by all parties. Once all the requirements listed in Section 1.1 of the Interconnection Agreement have been met, Distributor will notify the Participant in writing when the Participant's Qualifying System is authorized for interconnection and parallel operation.

1.4. Standards and Certification Criteria

The DG Equipment must comply with the latest revision of the following standards and the Participant must provide evidence of the certification as required in the DG Interconnection Application:

1.4.1. IEEE1547 Standard for Interconnecting Distributed Resources with Electric Power Systems (including use of IEEE 1547.1 testing protocols to establish conformity)

1.4.2. IEEE1547.1 Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems

1.4.3. UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems

1.4.4. NFPA 70 National Electrical Code

1.4.5. The DG Equipment shall be considered certified for interconnected operation if the generation equipment and all related interconnection components have been tested and listed by a Nationally Recognized Testing Laboratory (NRTL certification by Department of Labor) for continuous interactive operation with an electric distribution system in compliance with the codes and standards outlined in 1.4.1 – 1.4.4 above.

1.4.6. The Participant must provide evidence that the installation has been inspected and approved by state or local code officials, as applicable, prior to its interconnection and operation in parallel.

1.4.7. The installation of Solar Photovoltaic (PV) equipment and all associated wiring and interconnections shall be performed only by a qualified person as required by NEC 690.4(C).

2. FAST TRACK SCREENING PROCESS

2.1. Applicability

Distributor will determine if the proposed system can follow the Fast Track process or if the design of the system would require evaluation under the Study Process of Section 3. Generally this process is available to a Participant whose proposed DG Equipment is no larger than 2 MW and meets the codes, standards, and certification requirements of Section 1.4 above.

2.1.1. Fast Track Review Screens

Within 15 business days after Distributor has notified Participant that the Application is sufficient and complete, Distributor shall perform an initial review using the screens set forth below and shall notify the Participant of the results.

2.1.2. Generation On Circuit As A Percent of Annual Peak Load

For interconnection of the proposed DG equipment to a radial distribution circuit, the aggregated generation, including the proposed DG Equipment, on the circuit shall not exceed 15 % of the line section annual peak load as most recently measured at the substation. A line section is that portion of a Distributor's electric

system connected to a member-consumer bounded by automatic sectionalizing devices or the end of the distribution line.

2.1.3. Maximum Fault Current
The proposed DG Equipment, 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 high voltage (primary) level nearest the proposed point of interconnection.

2.1.4. Short Circuit Interrupting capability
The DG Equipment, in aggregate 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 Participant equipment on the system to exceed 87.5 % of the short circuit interrupting capability; nor shall the interconnection be proposed for a circuit that already exceeds 87.5 % of the short circuit interrupting capability.

2.1.5. Type of Interconnection
Using the table below; determine the type of transformer connection allowable to interconnect the DG Equipment with a primary distribution line through a transformer. This screen includes a review of the type of electrical service provided to the Participant, including line configuration and the transformer connection to limit the potential for creating over-voltages on the Distributor's power system due to a loss of ground during the operating time of any anti-islanding function.

Primary Distribution Line Type	**Type of Interconnection to Primary Distribution Line**	**Result/Criteria**
Three-phase, three wire	3-phase or single phase, phase-to-phase	Pass screen
Three-phase, four wire	*Effectively-grounded 3 phase or Single-phase, line-to-neutral*	*Pass screen*

2.1.6. Maximum Size for Single Phase
If the DG Equipment is to be interconnected on single-phase secondary, shared secondary, or individual service, the aggregate generation capacity on the single-phase secondary, shared secondary, or individual service shall not exceed 15 kW.

2.1.7. Load Balance
If the DG Equipment is single-phase and is to be interconnected on a center tap neutral of a 240 volt service; its addition shall not create an imbalance between

the two sides of the 240 volt service of more than 20 % of the nameplate rating of the service transformer. If the DG Equipment is single-phase and is to be interconnected to a three phase service secondary or service, its addition shall not cause the load on any of the individual phases to exceed twice the load on any of the other two phases.

2.1.8. Transient Stability Problems
The DG Equipment, in aggregate with other generation interconnected to the distribution side of a substation transformer feeding the circuit where the DG Equipment proposes to interconnect shall not exceed 2 MW in an area where there are known, or posted, transient stability limitations to generating units located in the general electrical vicinity (e.g., three or four distribution busses from the point of interconnection).

2.1.9. No Upgrades Required
No construction of facilities by Distributor on its own distribution system shall be required to accommodate the DG Equipment.

2.2 Fast Track Screening Results

If the DG Equipment passes the screens, the Participant's Application will be approved and Distributor will provide the Participant written notice that the DG Equipment of the Participant has been classified as a Qualifying System and Participant may proceed with the installation. If the proposed project does not pass the screens, the Participant will be notified and offered the opportunity to attend a meeting where the processes outlined in **3.0 Study Process** will be explained and a course of action determined.

Remainder of this page left blank intentionally

3. STUDY PROCESS

The study process (see Figure 2) consists of the Minimum Engineering Review, the System Impact Study and the Facilities Study. At an initial meeting, the parties shall determine whether a Minimum Engineering Review is sufficient, or the parties shall proceed directly to a System Impact study, or a System Upgrade Study.

3.1. Minimum Engineering Review

The "Minimum Engineering Review", also known as the Feasibility Study in FERC Order 2006, is designed to identify any adverse system impacts that would result from interconnection of the DG Equipment. Examples of such negative impacts would include, but not be limited to, exceeding the short circuit capability rating of any distribution overcurrent equipment, violations of thermal overload or voltage limits, and a review of grounding requirements and electric system protection. If Distributor determines that the minimum engineering review will require substantial time, Distributor will require Participant to reimburse Distributor for the costs associated with this review.

3.2. System Impact and Facilities Studies

Beyond the Minimum Engineering Review, the study process includes the System Impact Study and the Facilities Study. The System Impact Study is designed to identify and detail the electric system impacts that would result if the proposed project were interconnected without project modifications or electric system modifications, focusing on the adverse system impacts identified in the Feasibility Study. The System Impact Study shall evaluate the impact of the proposed interconnection on the reliability of the electric system.

In instances where the Minimum Engineering Review shows potential for distribution system adverse impacts, Distributor shall send the Participant a Distribution System Impact Study Agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study, if such a study is required. Once the Participant agrees to pay the cost of the study, the process continues.

Once the required System Impact Study is complete, a Facilities Study Agreement if needed, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the Facilities Study, shall be sent to the Participant. Design for any required Interconnection Facilities and/or Upgrades shall be performed under the Facilities Study Agreement. Upon completion of the Facilities Study, and with the agreement of the Participant to pay for Interconnection Facilities and Upgrades identified in the Facilities Study, including posting of security if required by Distributor, Distributor shall provide the Participant a notice that the DG Equipment of Participant has been classified as a Qualifying System and Participant may proceed with purchase and installation.

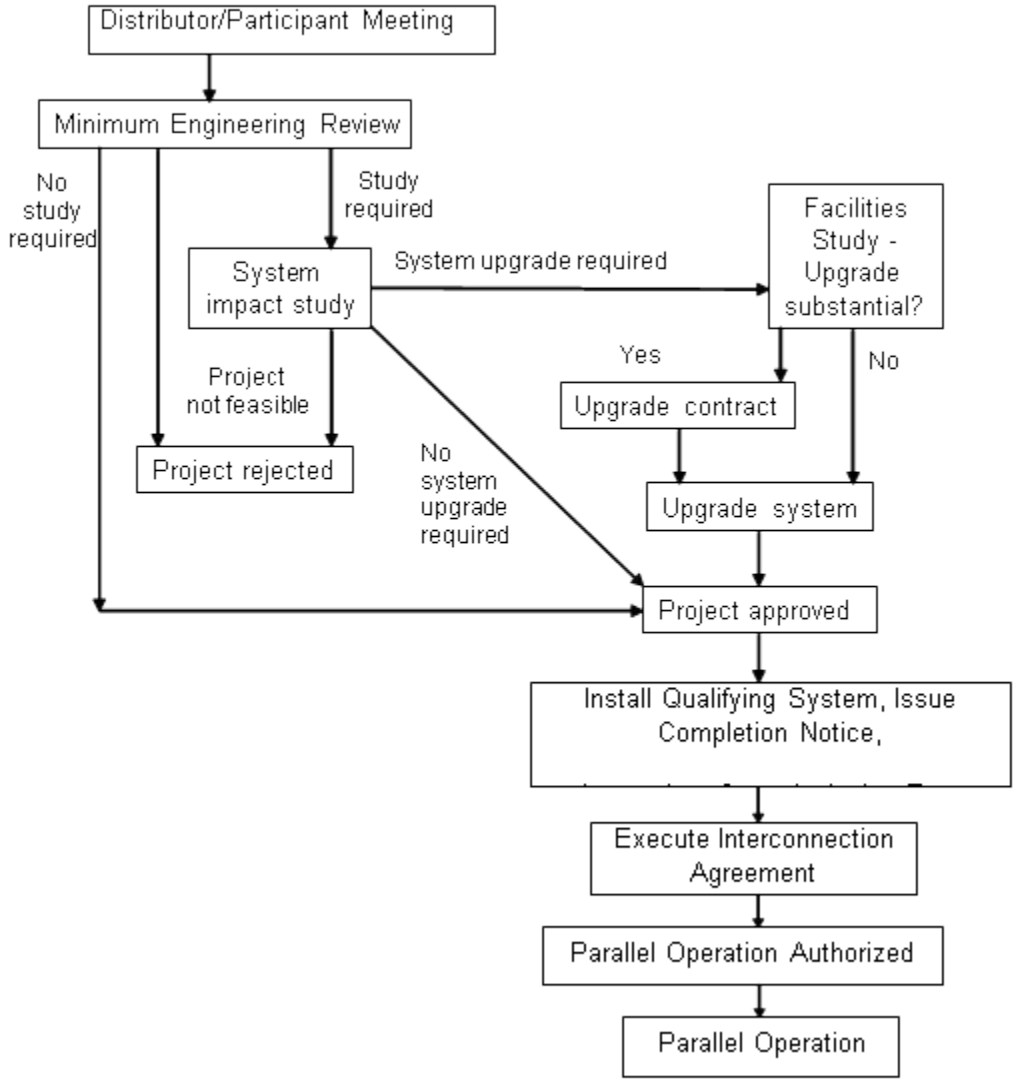

Figure 2. The Study Process