R14-2-2603. Types of Generating Facilities

A. A Customer may operate a Generating Facility as an Exporting System, a Non-Exporting System, or an Inadvertent Export System.

B. An Applicant shall declare the Maximum Capacity of a Generating Facility in its Application.

C. If an Applicant claims a Generating Facility is a Non-Exporting System:
   1. The Utility may require an independent third-party certification ensuring that the system meets the following standards:
      a. Is able to supply part or all of the Customer's load continuously or during a Utility power outage;
      b. Is sized such that the export of power is not possible or includes control functions to prevent the export of power; and
      c. Has control functions that are listed by an NRTL for the purpose as used and are also inspected and approved by the Customer's Jurisdictional Electric Inspection Agency; and
   2. The Applicant shall ensure that the Generating Facility utilizes any combination of equipment, hardware, or software, as specified by the Utility in its Interconnection Manual, to prevent the transfer of electrical energy to the Distribution System.

D. If an Applicant claims a Generating Facility is an Inadvertent Export system that does not utilize only UL 1741-certified or UL 1741SA-listed grid support non-islanding inverters:
   1. The Utility may require additional protective functions and equipment to detect Distribution System faults;
   2. The amount of Inadvertent Export to the Distribution System shall be limited to the lesser of the following values:
      a. 50% of the Generating Facility's Maximum Capacity;
      b. 10% of the continuous conductor rating in watts at 0.9 power factor for the lowest rated feeder conductor upstream of the Generating Facility; or
      c. 500 kW; and
   3. The expected frequency of Inadvertent Export events shall be less than two occurrences per 24-hour period.

E. If an Applicant claims a Generating Facility is an Inadvertent Export system that utilizes only UL 1741-certified or UL 1741SA-listed grid support non-islanding inverters, the Generating Facility shall:
   1. Utilize control functions that limit the export of electrical power to the Distribution System;
   2. Have a Maximum Capacity of 500 kVA or less;
   3. Have a magnitude of Inadvertent Export no more than 100 kVA;
   4. Have a duration of Inadvertent Export of power of less than 30 seconds for any single event;
   5. Monitor that its total energy export per month is maintained to be no more than its Maximum Capacity multiplied by 0.1 hours per day over a rolling 30-day period (e.g., a 100 kVA gross nameplate capacity Generating Facility would have a maximum energy export per 30-day month of 300 kWh);
   6. Disconnect the Generating Facility from the Distribution System in the event of an Inadvertent Export, ceasing to energize the Distribution System or halting energy production, within two seconds after the period of uninterrupted export exceeds 30 seconds or the magnitude of export exceeds 100 kVA; and
   7. Enter a safe operation mode, where Inadvertent Export events cannot occur, upon failure of the control or inverter system for more than 30 seconds, whether from loss of control signal, loss of control power, or a single component failure or related control sensing of the control circuitry.

R14-2-2604. Customer Rights and Responsibilities

A. A Customer has the following rights:
   1. To designate a Representative to act on the Customer's behalf;
   2. To submit an Application to interconnect a Generating Facility with a Distribution System;
   3. To expect prompt and professional responses from a Utility during the Interconnection process;
   4. To expect detailed and itemized good faith estimates of cost from the Utility;
   5. To expect outlines, supporting data, and justification for proposed work before the Utility undertakes any studies or system upgrades to accommodate the Generating Facility;
   6. To sign documents using an electronic (e-signature) method if the Customer has the technical capability to sign electronically and is submitting the documents electronically; and
   7. To request a one-time 90-day extension from the Utility using a simple notification process and not to have an extension unreasonably withheld for circumstances beyond the Customer's control.

B. A Customer shall ensure that:
   1. The Generating Facility meets or exceeds all minimum Interconnection, safety, and protection requirements outlined in this Article and the Utility's Interconnection Manual;
   2. The Generating Facility meets all applicable construction codes, safety codes, electric codes, laws, and requirements of government agencies having jurisdiction;
   3. The Generating Facility's Certified Equipment is installed and operated in a manner that protects the Generating Facility, Utility personnel, the public, and the Distribution System from harm;
   4. The Generating Facility design, installation, maintenance, and operation minimize the likelihood of causing a malfunction in, damaging, or otherwise impairing the Distribution System;
   5. The Generating Facility does not adversely affect the quality of service to other Utility consumers;
   6. The Generating Facility does not hamper efforts to restore a feeder to service when a Clearance is required;
   7. The Generating Facility is maintained in accordance with applicable manufacturers' maintenance schedules; and
   8. The Utility is notified of any emergency or hazardous condition or occurrence involving the Generating Facility that could affect safe operation of the Distribution System.

C. A Customer shall pay for; lease or own; and be responsible for designing, installing, and operating all Interconnection Facilities located on the Customer's side of the Point of Interconnection.

D. A Customer shall ensure that Interconnection Facilities:
   1. Are located on the Customer's premises; and
   2. To enable delivery of power from the Generating Facility to the Distribution System at the Point of Interconnection, include:
      a. Necessary equipment for:
         i. Connection,
         ii. Transformation,
         iii. Switching,
         iv. Protective relaying,
         v. Metering,
         vi. Communication, and
         vii. Safety requirements;
      b. A Disconnect Switch; and
      c. Any other requirements outlined in this Article or specified by the Utility in its Interconnection Manual.

E. A Customer interconnecting a Generating Facility with the Distribution System shall:
   1. Sign an Interconnection Agreement and all other applicable purchase, supply, and standby agreements; and
   2. Comply with all applicable tariffs, rate schedules, and Utility service requirements.

F. A Customer shall not interconnect or cause Interconnection of a Generating Facility to the Distribution System without first executing an Interconnection Agreement with the Utility that operates the Distribution System.

R14-2-2605. Utility Rights and Responsibilities

A. A Utility shall interconnect a Generating Facility to the Distribution System, subject to the requirements of this Article and of the Utility's Interconnection Manual.

B. A Utility has the right to expect prompt, reasonable, and professional responses from a Customer during the Interconnection process.

C. A Utility shall require that an interconnected Generating Facility:
   1. Not present any hazards to Utility personnel, other Utility consumers, or the public;
   2. Minimize the possibility of damage to the Utility and to other Utility consumers' equipment;
   3. Not adversely affect the quality of service to other Utility consumers; and
   4. Not hamper efforts to restore a feeder to service when a Clearance is required.

D. A Utility shall notify a Customer if there is reason to believe that operation of the Customer's Generating Facility has caused disruption or deterioration of service to other Utility consumers served from the Distribution System or that such operation has caused damage to the Distribution System.

E. A Utility shall make its Interconnection Manual, standard Application, and Interconnection Agreements readily available to an Applicant in print and online formats.

F. Following the receipt of an Application, a Utility shall review the Generating Facility to ensure it complies with the applicable screens in R14-2-2615. If the Generating Facility design does not comply with the applicable screens in R-14-2-2615, an Interconnection Study may be required. Before the Utility undertakes any Interconnection Study or system upgrades that will be charged to the Applicant, the Utility shall provide the Applicant a detailed estimate of the cost, an outline of the proposed work, supporting data, and justification for the proposed work. If the results of an Interconnection Study necessitate additional Interconnection Facilities or upgrades, the Utility shall provide written notice to the Applicant of the Utility's intent to install the Interconnection Facilities or upgrades. The Applicant shall pay the Utility for Interconnection Facilities or upgrades identified in the Interconnection Study except for those unrelated to the Generating Facility installation. The Utility shall provide the results of the Interconnection Study to the Applicant.

G. A Utility may not disapprove Interconnection of a Generating Facility that satisfies the requirements of this Article and the Utility's Interconnection Manual.

H. If additional Interconnection Facilities or upgrades are needed to accommodate a Generating Facility, and the Interconnection Facilities or upgrades will benefit the grid, the Utility shall reduce the charge of the Interconnection Facilities or upgrades to the Customer by the amount of benefits to the grid that are readily quantifiable by the Utility. A Utility shall not reject an Application on the basis of existing Distribution System conditions that are deficient, or charge a Customer for Interconnection Facilities or upgrades that are overdue or that will soon be required to ensure compliance with Good Utility Practice.

I. A Utility shall process each Application on a nondiscriminatory basis.

R14-2-2611. Certification

A. To qualify as Certified Equipment, Generating Facility equipment proposed for use separately or packaged with other equipment in an Interconnection system shall:
   1. Comply with all applicable codes and standards required by this Article and referenced in the Utility Interconnection Manual;
   2. Comply with all applicable codes and standards used by an NRTL to test and certify Interconnection equipment; and
   3. Be labeled and publicly listed as certified by the NRTL at the time of Application submission.

B. If Certified Equipment includes only interface components (switchgear, inverters, or other interface devices), a Customer shall show, upon request from the Utility, that the Generating Facility is compatible with the interface components and consistent with the testing and listing specified for the Interconnection equipment.

C. A Customer is not required to ensure that equipment provided by the Utility is Certified Equipment.

R14-2-2612. No Additional Requirements

If a Generating Facility complies with all applicable requirements of R14-2-2611, complies with the screens listed in R14-2-2615, and complies with the Utility's Interconnection Manual, a Utility shall not require the Customer to install additional controls, or to perform or pay for additional tests, in order to obtain approval to interconnect, unless the Customer agrees to do so or the Commission so requires. A Utility may install additional equipment or perform additional testing at its own expense.

R14-2-2613. Disconnection from or Reconnection with the Distribution System

A. A Utility may disconnect a Generating Facility from the Distribution System under the following conditions:
   1. Upon expiration or termination of the Interconnection Agreement with a Customer, in accordance with the terms of the Interconnection Agreement;
   2. Upon determining that the Generating Facility is not in compliance with the technical requirements found within the Utility's Interconnection Manual;
   3. Upon determining that continued Interconnection of the Generating Facility will endanger system operations, persons, or property, for the time needed to make immediate repairs on the Distribution System;
   4. To perform routine maintenance, repairs, and system modifications; and
   5. Upon determining that an Interconnection Agreement is not in effect for the Generating Facility.

B. A Utility and a Customer shall cooperate to restore the Generating Facility and the Distribution System to their normal operating states as soon as practicable.

C. A Customer may temporarily disconnect the Generating Facility from the Distribution System at any time. Such temporary disconnection shall not constitute a termination of the Interconnection Agreement unless the Customer has so specified in writing.

D. Except in the case of a disconnection under subsection (A)(3), a Utility shall provide notice to a Customer before disconnecting the Generating Facility. The Utility shall provide the Customer notice at least three calendar days prior to the impending disconnection and shall include in the notice the date, time, and estimated duration of the disconnection.

E. When a Generating Facility is disconnected under subsection (A)(2):
   1. The Customer shall notify the Utility when the Generating Facility is restored to compliance with technical requirements;
   2. The Utility shall, within five calendar days after receiving the Customer's notice, have an inspector verify the compliance; and
   3. Upon verifying the compliance, the Utility shall, in coordination with the Customer, reconnect the Generating Facility.

F. A Utility shall reconnect a Generating Facility as quickly as practicable after determining that the reason for disconnection is remedied.

G. An Interconnection Agreement shall continue in effect after disconnection or termination of electric service to the extent and for the period necessary to allow or require the Utility or Customer to fulfill rights or obligations that arose under the agreement, notwithstanding subsection (H)(4). An Interconnection Agreement cannot be for a term less than the expected life of the Generating Facility, unless mutually agreed upon by the Customer and the Utility.

H. An Interconnection Agreement shall become effective on the effective date specified in the Interconnection Agreement and shall remain in effect thereafter unless and until:
   1. It is terminated by mutual agreement of the Utility and Customer;
   2. It is replaced by another Interconnection Agreement, with mutual consent of the Utility and Customer;
   3. It is terminated by the Utility or the Customer due to a breach or default of the Interconnection Agreement; or
   4. The Customer terminates Utility electric service, vacates or abandons the property on which the Generating Facility is located, or terminates or abandons the Generating Facility, without the Utility's agreement.

I. An Interconnection Agreement shall not be terminated in the event of the sale or lease of the property owned by the Customer. If the ownership of a Generating Facility changes, the Interconnection Agreement will remain in effect so long as the operation of the Generating Facility, as specified in the Interconnection Agreement, remains unchanged. The Customer shall provide notice to the Utility within seven calendar days in the event of a change in the ownership of the Generating Facility.

J. Upon termination of an Interconnection Agreement:
   1. The Customer shall ensure that the electrical conductors connecting the Generating Facility to the Distribution System are immediately lifted and permanently removed, to preclude any possibility of interconnected operation in the future; and
   2. The Utility may inspect the Generating Facility to verify that it is permanently disconnected.

R14-2-2614. Application and Generating Facility General Requirements

A. A Customer desiring to interconnect to the Distribution System a Generating Facility that is not a Non-Exporting inverter-based energy storage Generating Facility or an Inadvertent Export Generating Facility with a Maximum Capacity of 20 kW or less shall apply to the Utility for Interconnection as provided in this Section.

B. An Applicant shall submit an Application on a form provided by the Utility, or according to a format provided by the Utility, along with the following:
   1. All supplemental information and documents required by the Utility, which shall be noted on the Utility's Application or Application instructions;
   2. An executed Interconnection Agreement, if required by the Utility; and
   3. An initial Application or processing fee, if a tariff containing such a fee is approved for the Utility by the Commission.

C. Upon request, a Utility shall provide an Applicant with sample diagrams that indicate the preferred level of detail and type of information required for a typical inverter-based system.

D. Within seven calendar days after receiving an Application, a Utility shall review the Application and provide the Applicant notice:
   1. That the Application satisfies all requirements under subsection (B); or
   2. That the Application does not satisfy one or more requirements under subsection (B), in which case:
      a. The Utility shall specify the additional information or documents required;
      b. The Applicant shall submit the specified information or documents; and
      c. The Application may be deemed withdrawn if the Applicant does not submit the required information or documents within 30 calendar days.

E. A Generating Facility shall comply with the following general requirements:
   1. If inverter based, each inverter shall meet the shutdown protective functions (under/over voltage, under/over frequency, and anti-Islanding) specified in IEEE 1547-2018 – IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces (April 6, 2018), with no future editions or amendments, which is incorporated by reference; on file with the Commission; and published by and available from IEEE, 3 Park Avenue, 17th Floor, New York, New York 10016, and through http://ieeexplore.ieee.org;
   2. The Generating Facility shall meet all applicable codes and standards required by this Article and referenced in the Utility Interconnection Manual; and
   3. The Generating Facility shall comply with the Utility's Interconnection Manual and Interconnection Agreement requirements.

R14-2-2615. Screens

A. For Interconnection of a proposed Generating Facility to a distribution circuit, the aggregated generation on the circuit, including the proposed Generating Facility, shall not exceed 15% of the total circuit annual peak load as most recently measured at the substation or on the line section (if available), or the circuit hosting capacity limit; whichever is greater. Non-Exporting Systems, regardless of system size, and Inadvertent Export systems with a Maximum Capacity of 20 kW and under shall not be subject to this subsection.

B. A proposed Generating Facility shall not contribute more than 10% to a distribution circuit's maximum fault current at any point on the Distribution System, including during normal contingency conditions that may occur due to reconfiguration of the feeder or the distribution substation.

C. The proposed Maximum Capacity of a Generating Facility, in aggregate with the Maximum Capacity of other generation on a distribution circuit, shall not cause any distribution protective devices and equipment (including but not limited to substation breakers, fuse cutouts, and line reclosers), or consumer equipment on the system, to exceed 90% of the short circuit interrupting capability. Interconnection shall not be proposed for a circuit that already exceeds 90% of the short circuit interrupting capability.

D. A proposed Generating Facility shall be interconnected to the Distribution System as shown in the table below:

Primary Distribution Line Configuration	Interconnection to Primary Distribution Line
Three-phase, three wire	If a three-phase or single-phase Generating Facility, Interconnection shall be phase-to-phase
Three-phase, four wire	If a three-phase (effectively grounded) or single-phase Generating Facility, Interconnection shall be line-to-neutral

E. If a proposed Generating Facility is to be interconnected on single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Maximum Capacity of the Generating Facility, shall not exceed 75% of the service transformer rating. Non-Exporting Systems and Inadvertent Export systems shall not be subject to this subsection.

F. If a proposed Generating Facility is single-phase and is to be interconnected on a transformer 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.

G. A proposed Generating Facility, in aggregate with other generation interconnected to the distribution low-voltage side of a substation transformer feeding the distribution circuit where the Generating Facility would interconnect, shall not exceed 10 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 transmission voltage level busses from the Point of Interconnection). Non-Exporting Systems, regardless of system size, and Inadvertent Export systems with a Maximum Capacity of 20 kW and under shall not be subject to this subsection.

H. A proposed Generating Facility's Point of Interconnection shall not be on a transmission line.

I. A proposed Generating Facility shall not exceed the capacity of the Customer's existing electrical service unless there is a simultaneous request for an upgrade to the Customer's electrical service or the Generating Facility is configured never to inject onto the feeder power that exceeds the capacity of the electrical service.

J. If a proposed Generating Facility is non-inverter based, the Generating Facility must comply with the Protective Function requirements and any additional Utility Interconnection requirements, which shall be specified by the Utility in its Interconnection Manual.

R14-2-2617. Level 1 Super Fast Track

A. A Customer interconnecting an inverter-based Generating Facility with a Maximum Capacity of 20 kW or less, which only uses Certified Equipment, shall apply for Interconnection under the Level 1 Super Fast Track Application process.

B. To qualify for Level 1 Super Fast Track, the Generating Facility shall comply with R14-2-2615(A), (E), and (F).

C. The Level 1 Super Fast Track shall proceed as follows:

1. Within 14 calendar days following provision of notice under R14-2-2614(D)(1), the Utility shall review the Application and notify the Applicant of one of the following determinations:
   a. The Generating Facility design satisfies R14-2-2615(A), (E), and (F) and meets all Interconnection requirements and the Application is therefore deemed complete and approved for Interconnection; or
   b. The Generating Facility design does not satisfy one or more of the requirements listed in R14-2-2615(A), (E), or (F) or does not meet one or more of the Utility's Interconnection requirements, which shall be specified, and the Application is therefore deemed incomplete and not approved for Interconnection.
2. If the Utility's determination falls under subsection (C)(1)(b), the Applicant shall notify the Utility within 30 calendar days whether it wishes to proceed with the Interconnection.
   a. Except as provided in subsection (D), if the Applicant does not provide notice within 30 calendar days that it wishes to proceed with the Interconnection, the Application may be considered withdrawn.
   b. If the Applicant wishes to proceed with the Interconnection, the Applicant shall submit to the Utility, within 30 calendar days, any Utility-specified additional information or modifications to the Generating Facility, along with one of the following:
      i. A request that the Utility continue to process the Application under this section; or
      ii. A request that the Utility process the Application in accordance with R14-2-2620.
3. Once an Application is approved, the Generating Facility shall be subject to R14-2-2621.

D. An Applicant may, within 30 calendar days after receiving notice under subsection (C)(1)(b), submit a request for an extension of the 30-day period allowed for submissions under subsection (C)(2)(b).

E. After receiving a submission under subsection (C)(2)(b), a Utility shall again follow the process of subsection (C).

F. A Utility may not charge a fee for an additional review under subsection (C), unless a tariff containing such a fee is approved for the Utility by the Commission.

G. A Customer shall be responsible for any costs of Utility facilities and equipment modifications necessary to accommodate the Customer's Interconnection.

H. If the Generating Facility's operating characteristics can be modified such that improvements to the Distribution System are reduced or not required, and both the Utility and Customer agree on the operating characteristics, the Customer shall have the opportunity to modify the Generating Facility's operating characteristics to reduce facility costs.

R14-2-2618. Level 2 Fast Track

A. A Customer interconnecting a Generating Facility with a Maximum Capacity of less than 2 MW, excluding a Generating Facility processed in accordance with R14-2-2617, shall apply for Interconnection under the Level 2 Fast Track Application process.

B. To qualify for the Level 2 Fast Track, the Generating Facility shall comply with R14-2-2615(A) through (J).

C. The Level 2 Fast Track shall proceed as follows:

1. Within 21 calendar days following provision of notice under R14-2-2614(D)(1), the Utility shall review the Application and notify the Applicant of one of the following determinations:
   a. The Generating Facility design satisfies R14-2-2615(A) through (J) and meets all Interconnection requirements and the Application is therefore deemed complete and approved for Interconnection; or
   b. The Generating Facility design does not satisfy one or more of the requirements listed in subsections R14-2-2615(A) through (J) or does not meet one or more of the Utility's Interconnection requirements, which shall be specified, and the Application is therefore deemed incomplete and not approved for Interconnection.
2. If the Utility's determination falls under subsection (C)(1)(b), the Applicant shall notify the Utility within 30 calendar days whether it wishes to proceed with the Interconnection.
   a. Except as provided in subsection (D), if the Applicant does not provide notice within 30 calendar days that it wishes to proceed with the Interconnection, the Application may be considered withdrawn.
   b. If the Applicant wishes to proceed with the Interconnection, the Applicant shall submit to the Utility, within 30 calendar days, any Utility-specified additional information or modifications to the Generating Facility, along with one of the following:
      i. A request that the Utility continue to process the Application under this section;
      ii. A request that the Utility process the Application in accordance with R14-2-2619; or
      iii. A request that the Utility process the Application in accordance with R14-2-2620.
3. Once an Application is approved, the Generating Facility shall be subject to R14-2-2621.

R14-2-2625. Advanced Inverter Requirements

A. If interconnected after the effective date of this Article, a Generating Facility utilizing inverter-based technology shall be interconnected via advanced inverter(s) that are capable of, at minimum, the advanced grid support features specified in subsection (B).

B. At a minimum, an advanced inverter shall be capable of the following grid support features:
   1. Volt/VAR Mode – Provide voltage/VAR control through dynamic reactive power injection through autonomous responses to local voltage measurement;
   2. Volt/Watt Mode – Provide voltage/watt control though dynamic active power injection through autonomous responses to local voltage measurement;
   3. Fixed Power Factor – Provide reactive power by a fixed power factor;
   4. Anti-Islanding – Support anti-Islanding to trip off under extended anomalous conditions;
   5. Low/High Voltage Ride-through (L/HVRT) – Provide ride-through of low/high voltage excursions beyond normal limits;
   6. Low/High Frequency ride-through (L/HFRT) – Provide ride-through of low/high frequency excursions beyond normal limits;
   7. Soft-Start Reconnection – Reconnect after grid power is restored; and
   8. Frequency/Watt Mode – Provide Frequency/Watt control to counteract frequency excursions beyond normal limits by decreasing or increasing real power.

C. The grid support features listed in subsections (B)(1), (2), (3), (7), and (8) shall only be activated upon mutual consent between the Customer and the Utility.

D. The grid support features listed in subsections (B)(4), (5), and (6) shall always be operational.

E. Advanced inverters shall meet the shutdown protective functions (under/over voltage, under/over frequency, and anti-Islanding) specified in IEEE 1547-2018, which is incorporated by reference in R14-2-2614(E)(1).