5.500 INTERCONNECTION PROCEDURES FOR PROPOSED ELECTRIC GENERATION RESOURCES

5.501 Applicability
This Rule applies to all proposed interconnections of Generation Resources within the State of Vermont which are not lawfully subject to ISO-NE interconnection rules or successor rules approved by FERC. This Rule does not apply to facilities within the State of Vermont that were interconnected or had obtained all necessary approvals for interconnection with electric power transmission or distribution systems prior to 60 business days after the effective date of This Rule.

5.502 Definitions

(1) **Affected System** – any electric system that is either directly or indirectly connected to the Interconnecting Utility’s electric system that could be adversely affected by the interconnection and parallel operation of the Interconnection Requester's Generation Resource.

(2) **Application** – a request for interconnection initiated by either 1) the completed Registration Form or Application Form under Rule 5.100 or 2) the completed Standard Application Form provided by the Board for the interconnection of Generation Resources, the Application Fee, documentation of site control, and information regarding certification or Underwriters Laboratory listing of the Interconnection Requester's Generation Resource. The Board may revise the Standard Application Form from time to time, as necessary.

(3) **Application Fee** – the Application Fee shall be $600.

(4) **Automatic Disconnect Device** – an electronic or mechanical switch used to isolate a circuit or piece of equipment from a source of power without the need for human intervention.

(5) **Board** – the Vermont Public Service Board.

(6) **Disconnect (verb)** – To isolate a circuit or equipment from a source of power. If isolation is accomplished with a solid-state device, "disconnect" shall mean to cease the transfer of power.

(7) **Disconnection** – the state of a circuit or equipment being disconnected from a source of power.

(8) **Distribution Level Study** – a System Impact Study conducted at the distribution level.

(9) **Emergency** – a situation in which continued interconnection of a Generation Resource is imminently likely to result in significant disruption of service or endanger life or property.
(10) **Facilities Study** – a study to determine which Interconnection Facilities or System Upgrades are necessary for interconnection of the Generation Resource.

(11) **Facilities Study Report** - contains the results of the Facilities Study, and is transmitted to the Interconnection Requester in accordance with Section 5.510.

(12) **Fast Track** – the process for establishing an interconnection for certain qualifying Generation Resources in accordance with Section 5.506 of This Rule.

(13) **Fast Track Screening Criteria** – the screening criteria for Generation Resources set forth in Section 5.506 of This Rule.

(14) **Feasibility Study** – a study consisting of initial engineering analyses regarding the feasibility of interconnecting the Generation Resource, if the Generation Resource is not eligible for Fast Track.

(15) **Feasibility Study Report** - contains the results of the Feasibility Study, and other information pursuant to Sections 5.508(A-D).

(16) **FERC** – the Federal Energy Regulatory Commission.

(17) **Flicker** – voltage fluctuations caused by rapid changes in Generation Resource output.

(18) **Frequency Ride Through** – the ability of a Generation Resource to stay connected to and synchronized with the system or equipment of the Interconnecting Utility and any Affected Systems during system disturbances within a range of under-frequency and over-frequency conditions, in accordance with Good Utility Practice and consistent with any standards and guidelines that are applied to other generating facilities in the Interconnecting Utility’s service territory on a comparable basis.

(19) **Generation Capacity** - the maximum AC electric output a Generation Resource can produce.

(20) **Generation Resource** – a facility that produces electric energy from other energy sources. This includes electric energy storage capable of inserting electric energy onto the grid.

(21) **Good Utility Practice** – Any of the practices, methods and acts engaged in or approved by a significant portion of the electric industry operating a comparable distribution system during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and
expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

(22) IEEE – Institute of Electrical and Electronics Engineers, Inc.

(23) Interconnecting Utility – Electric utility with which the Interconnection Requester proposes to interconnect a Generation Resource.

(24) Interconnection Agreement – an agreement between an Interconnecting Utility and Interconnection Requester regarding the interconnection and parallel operation of a Generation Resource. The Interconnection Agreement is accompanied by or includes Technical Requirements and Operator Protocols.

(25) Interconnection Facilities – all facilities and equipment between the Generation Resource and the Point of Interconnection, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Generation Resource to the Interconnecting Utility's distribution or transmission system. Interconnection Facilities are sole-use facilities and shall not include System Upgrades.

(26) Interconnection Requester – person or entity who proposes to interconnect a Generation Resource with an Interconnecting Utility.

(27) Interconnection Queue – The list of Applications for the interconnection of Generation Resources, in order based upon the date- and time-stamp of complete Applications, maintained by each Interconnection Utility.


(29) Material Modification – those modifications to the interconnection request, including any of the technical data provided by the Interconnection Requester in the Application, requested by the Interconnection Requester, that either require additional analysis of the same Interconnection Request or could substantially change the interconnection design or have a material impact on the cost or timing of any interconnection studies or upgrades associated with an interconnection request with a later queue position in the Interconnection Queue.

(30) Operator Protocols - an agreement between the Interconnection Requester and the Interconnecting Utility pertaining to the operation and maintenance of the Generation Resource.

(31) Point of Interconnection – The point on the Interconnecting Utility’s existing system to which the Interconnection Requester proposes to interconnect.

(32) Pre-Application Report - information about the application process and the point of proposed interconnection to the utility system.
(33) **Pre-Application Request** – A request from the Interconnection Requester for a Pre-Application Report pursuant to Section 5.504 using the PSB approved Pre-Application Request form.

(34) **PSB** – the Vermont Public Service Board.

(35) **Radial Feeder** – a distribution line that branches out from a substation and is normally not connected to another substation or another circuit sharing a common supply of electric power.

(36) **Rapid Voltage Fluctuation** - see Flicker.

(37) **Scoping Meeting** – an optional meeting between the Interconnecting Utility and the Interconnection Requester to discuss the results of the review of the Fast Track Screening Criteria, and how to proceed with the interconnection request.

(38) **Smart Inverter** – A Generation Resource’s inverter that performs functions that, when activated, can autonomously contribute to grid support during excursions from normal operating voltage and frequency system conditions by providing: dynamic reactive/real power support, Voltage Ride Through, Frequency Ride Through, ramp rate controls, communication systems with ability to accept external commands, and other functions.

(39) **Standard Application Form** - the form included as Attachment 1 to This Rule, as may be amended by the Board from time to time.

(40) **Study Agreement** – an agreement between the Interconnecting Utility and Interconnection Requester regarding the terms and conditions of the conduct of a study proposed by the Interconnecting Utility in order to proceed with the interconnection review process.

(41) **Supplemental Review** – a study conducted following Fast Track review, to determine whether a Generation Resource may be interconnected without requiring a System Impact Study.

(42) **System Impact Study** – any study or studies performed by an Interconnection Utility or a designated third party to ensure the safety, reliability, and stability of the electric power system with respect to the interconnection of Generation Resources.

(43) **System Impact Study Report** - contains the results of the System Impact Study, and other information pursuant to Sections 5.509.

(44) **System Upgrades** – the additions, modifications, and upgrades to the distribution system and/or transmission system at or beyond the Point of Interconnection to facilitate interconnection of the Generation Resource. System Upgrades do not
include Interconnection Facilities.

(45) **Technical Requirements** - an agreement between the Interconnection Requester and the Interconnecting Utility designed to provide protection to the public and to the personnel and equipment of the Interconnection Requester and Interconnecting Utility from the physical and financial risks associated with the interconnection and parallel operation of the proposed Generation Resource. The interconnection Technical Requirements accomplish this task through including, but not limited to, ensuring the installation of proper protective devices and metering equipment, and establishing performance criteria to minimize the probability that the Generation Resource will reduce the quality of service on the Interconnecting Utility's system.

(46) **This Rule** – PSB Rule 5.500: Interconnection Procedures for Proposed Electric Generation Resources.

(47) **Transmission Level Study** – a System Impact Study conducted at the transmission level.

(48) **Voltage Ride Through** – the ability of a Generation Resource to stay connected to and synchronized with the system or equipment of the Interconnecting Utility and any Affected Systems during system disturbances within a range of under-voltage and over-voltage conditions, in accordance with Good Utility Practice and consistent with any standards and guidelines that are applied to other generating facilities in Interconnecting Utility’s service territory on a comparable basis.

### 5.503 General Procedures

(A) Proposed Generation Resources that are eligible to use the registration or application form and associated procedures established by Rule 5.100 or are eligible to use the same registration or application form under 30 V.S.A. §8007(a) shall apply for interconnection using the Application identified in Section 5.505(A)(1), follow the applicable codes and standards in Section 5.503(C), and are exempt from the remaining requirements of This Rule, unless specifically noted herein. Such proposed Generation Resources shall be allowed to interconnect if the Interconnecting Utility does not raise any interconnection issues within the comment period specified in PSB Rule 5.100 and the proposed Generation Resource receives a Certificate of Public Good. If the Interconnecting Utility raises an issue, then the Interconnecting Utility and Interconnection Requester shall follow the complete requirements of This Rule, aside from the Application and, if allowed by the Interconnecting Utility, the Interconnection Agreement.

(B) Proposed Generation Resources not eligible to use the registration or application form and associated procedures established by Rule 5.100 and not subject to the simplified procedures allowed by 30 V.S.A. §8007(a) shall follow the requirements of This Rule.
(C) All proposed Generation Resources shall be designed to be in compliance with the applicable sections of the latest versions of:

- The IEEE 1547 Series of Standards for Interconnecting Distributed Resources with Electric Power Systems
- UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems;
- IEEE 1453 Flicker Measurements;
- National Electrical Safety Code; and
- National Electric Code

or interconnection is accomplished by use of a certified equipment package under Section 5.513.

(D) All studies conducted pursuant to This Rule shall consider all Generation Resources that:

- Are directly interconnected to the Interconnecting Utility's electric transmission or distribution system;
- Are interconnected to Affected Systems and may have an impact on the Interconnection Requester's Application; and
- Have a pending Application with an earlier position in the Interconnection Queue to interconnect to the electric transmission and/or distribution systems.

Studies shall model all such Generation Resources at their nameplate output or at some other reasonable and expected capacity determined by the Interconnecting Utility.

(E) After providing an opportunity for comment to the Department of Public Service, electric utilities, and other affected parties, the Board will provide model documents, which may be used by the Interconnecting Utility and Interconnection Requester, for the following: Pre-Application Report Request, any Study Agreement, Interconnection Agreement, Technical Requirements, and Operator Protocols. However, the Interconnecting Utility and Interconnection Requester may also voluntarily enter into different arrangements. In the event that these parties are unable to agree upon the terms of an agreement to be reached under This Rule, either party may petition the Board under Section 5.511(D) of This Rule for resolution of the dispute.

(F) The time deadlines specified in This Rule are maximum times. To avoid unnecessary delay of the Generation Resource project, the Interconnecting Utility is encouraged to complete each task in less time than allotted, to the extent feasible.

(G) A flow chart for the interconnection procedures specified in This Rule is included in Appendix A. The flow chart is provided for informational purposes only, and is not part of This Rule.

(H) For Supplemental Reviews and Feasibility, System Impact or Facilities studies for which This Rule requires the Interconnection Requester to bear the cost, the Interconnecting Utility may propose to group projects for more than one Interconnection
Requester in order to minimize costs through economies of scale.

(I) For Supplemental Reviews and Feasibility, System Impact or Facilities studies, the Interconnecting Utility may contract with consultants, including contractors acting on behalf of the Interconnecting Utility, to perform the activities required under the study agreements. The third party entities contracted with shall be licensed appropriately for each area of study.

5.504 Optional Pre-Application Report

(A) Upon receipt of a completed Pre-Application Report Request in a form approved by the Board and a non-refundable processing fee of $300, the Interconnecting Utility shall provide pre-application data described in this section within ten (10) business days of receipt. The Pre-Application Report Request shall include a proposed Point of Interconnection, generation technology and fuel source. The proposed Point of Interconnection shall be defined by latitude and longitude, site map, street address, utility equipment number (e.g. pole number), meter number, account number or some combination of the above sufficient to clearly identify the location of the Point of Interconnection.

(B) The Pre-Application Report will include the following information if available:

1) Total capacity (MW) of substation or circuit likely to serve proposed site.
2) Allocated capacity (MW) of substation or circuit likely to serve proposed site.
3) Queued capacity (MW) of substation or circuit likely to serve proposed site.
4) Available capacity (MW) of substation or bank and circuit most likely to serve proposed site.
5) Nominal distribution voltage of the circuit most likely to serve proposed site.
6) Approximate circuit distance between the proposed site and the substation.
7) Relevant line section(s) peak load estimate, and minimum load data, when available.
8) Number of protective devices and number of voltage regulating devices between the proposed site and the substation.
9) Whether or not three-phase power is available at the site.
10) Limiting conductor rating from proposed Point of Interconnection to the substation.
11) Based on proposed Point of Interconnection, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.

(C) The Pre-Application Report need only include pre-existing data. A Pre-Application Report request does not obligate utility to conduct a study or other analysis of the proposed project in the event that data are not available. If utility cannot complete all or some of a Pre-Application Report due to lack of available data, the utility will provide the applicant with a Pre-Application Report that includes the information that is available.
(D) In requesting a Pre-Application Report, applicant understands that:
   1) The existence of “Available Capacity” in no way implies that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process;
   2) The utility system is dynamic and subject to change;
   3) Data provided in the Pre-Application Report may be outdated and not useful at the time of submission of the complete Interconnection Request; and
   4) Pre-Application Report Requests are not placed in the Interconnection Queue. Notwithstanding any of the provisions of this Section, the utility shall, in good faith, provide Pre-Application Report data that represents the best available information at the time of reporting.

5.505 Application Submittal and Determination of Complete Application

(A) **Application.** The Interconnection Requester shall complete the appropriate application form, provided by the Board in an electronic format that notes the date and time of application submittal. The electronic form shall direct the completed application immediately and electronically to the Interconnecting Utility. Until such time as the Board provides the application form in electronic format, each utility shall accept the substitute form provided by the Board.

   (1) Net metered systems eligible to use a registration form or application form for a Certificate of Public Good application under Rule 5.100 or use the same registration or application form under 30 V.S.A. §8007(a) shall use that registration or application form.

   (2) Other systems shall use the Standard Application Form, provided electronically by the Board, for equipment of any size. In addition to the Standard Application Form, the Interconnection Requester shall include the following items and information in an Application:

      a. The Application Fee. The Application fee shall be non-refundable, unless the Application is withdrawn within five business days of submittal.

      b. Documentation of site control, which may be demonstrated through:

         i. fee simple title to such real property;

         ii. a valid written leasehold interest for such real property for at least the duration of the time it will take to develop the Generation Resource;

         iii. a valid written option with all terms stipulated unconditionally exercisable by the Interconnection Requester or its assignee, to
purchase or lease such real property; or

iv. a duly executed contract for the purchase or lease of such real property.

A lease must unconditionally bind the lessor, owner or the property, subject to payment of a named rent and compliance by the Interconnection Requester/lessee with standard commercial terms. An option or contract of sale must unconditionally confer on the Interconnection Requester the right to purchase or lease the property within an agreed upon period at a named price. It must be binding on the owner of the property and provide that the owner cannot unilaterally withdraw, revoke or rescind the obligation to sell or lease the property to the Interconnection Requester.

c. Information regarding certification or Underwriters Laboratory listing of the Interconnection Requester's Generation Resource.

(B) The Standard Application Form is included as Attachment 1 to This Rule.

(C) Each interconnecting utility shall maintain an Interconnection Queue for proposed Generation Resources, except for those Generation Resources allowed to interconnect under 5.503(A). Generation Resources that would otherwise be eligible to interconnect under 5.503(A), but for utility identification of interconnection issues within the comment period, shall be placed in the Interconnection Queue.

(1) The Interconnecting Utility shall assign each Generation Resource a position in the Interconnection Queue based upon the date- and time-stamp of the Interconnection Requester’s Application that is determined to be complete.

(2) The date-and time-stamp of the Application will be used to determine the cost responsibility for any System Upgrades necessary to accommodate the interconnection.

(3) The Interconnecting Utility shall make its Interconnection Queue available upon request, redacted to include only the Generation Resource type, location by town, interconnection point, fuel type (including renewable sources), and Generation Capacity of proposed Generation Resources.

(4) If the number and timing of interconnect requests for a specific area is such that interconnection requests directly impact each other, requiring the utility to study the projects serially in order to determine system impact, the Interconnecting Utility will notify the Interconnection Requester that its review of the project will be on hold until the Interconnecting Utility has completed its study or review of projects ahead of the Interconnecting Requester in the Interconnection Queue.
(D) Initial Notifications by Interconnecting Utility

(1) Until such time as the Board provides an electronic application form, the Interconnecting Utility shall provide the Interconnection Requester with a notification of receipt within 5 business days of receiving the Interconnection Requester's Application.

(2) The Interconnecting Utility shall notify the Interconnection Requester within 10 business days of the receipt of the Application as to whether the Application is complete or incomplete. The Interconnecting Utility may require electronic payment of the Application Fee. If the Interconnecting Utility allows the Application Fee to be paid by check, the Interconnecting Utility shall wait until the tenth business day of receipt of the Application for the Application Fee to arrive. If the Application Fee has not arrived in that time period, the Application shall be deemed incomplete.

   a. If the Application is complete, the Interconnecting Utility shall notify the Affected Systems in accordance with the same interconnection notification protocols that would apply if the Application were subject to FERC jurisdiction. In the case of a Generation Resource with a capacity greater than or equal to one megawatt (1 MW), the Interconnecting Utility shall notify all Vermont electric transmission or distribution utilities.

   b. If the Application is incomplete, the Interconnecting Utility shall provide, along with the Notice that the Application is incomplete, a written list detailing all information that must be provided to complete the Application. An Application will be complete upon submission to the Interconnecting Utility of a revised Application (which will have a new date and time stamp from the Board when the electronic application form is provided) containing the listed information. The proposed Generation Resource will be placed in the Interconnecting Utility’s Interconnection Queue based on the date- and time-stamp of the Application that is determined to be complete.

(E) Modification of Application. Any Material Modification to the information provided in the Application, including but not limited to machine data or equipment configuration, the Point of Interconnection, interconnection location or site control, not agreed to in writing by the Interconnecting Utility and the Interconnection Requester may be deemed by the Interconnecting Utility as a withdrawal of the Application and may require submission of a new Application. This provision shall apply during the process described in Sections 5.506 through 5.511 of This Rule. The Interconnection Requester shall notify the Interconnecting Utility immediately of any change in the information provided in the Application that was determined to be complete, including but not limited to the loss of site control.
5.506 Fast Track Screening Process

(A) Within 15 business days after the Interconnecting Utility notifies the Interconnection Requester it has received a complete Application, the Interconnecting Utility shall perform a review of the Application under the Fast Track Screening Criteria set forth below, shall notify the Interconnection Requester of the results, and shall include with the notification copies of the analysis and data underlying the Interconnecting Utility's determinations under the applicable Fast Track Screening Criteria.

(B) The results of a Fast Track analysis shall be provided to the Interconnection Requester and be part of the petition for a Certificate of Public Good pursuant to 30 V.S.A. § 248. The results will not only document the pass or fail of the Fast Track screening but also document any agreed-to resolution(s) of a failed item by its number in the Fast Track criteria. Resolutions identified in Supplemental Review or studies under Sections 5.508, 5.509, or 5.510 shall also be included as part of the petition for a Certificate of Public Good pursuant to 30 V.S.A. § 248.

(C) Fast Track Screening Criteria

1. The proposed Generation Resource’s Point of Interconnection must be on a portion of the Interconnecting Utility’s distribution or transmission system that is not otherwise subject to the ISO-NE interconnection procedures.

2. For interconnection to a Radial Feeder, the aggregated generation, including the proposed Generation Resource, on the circuit will not exceed the circuit’s minimum load coincident with expected times of generation operation, if available, or if minimum load is not available, 15% of the line section annual peak load as most recently measured at the substation.

3. For interconnection of a Generation Resource to the load side of spot network protectors, the proposed Generation Resource must utilize an inverter-based equipment package and, together with the aggregated other inverter-based generation, shall not exceed the smaller of 5% of a spot network’s maximum load or 50kW.

4. The proposed Generation Resource, in aggregation with other generation on the distribution circuit, shall not contribute more than 10% to the circuit's maximum fault current at the point on the high voltage (primary) level nearest the proposed Generation Resource.

5. The proposed Generation Resource, in aggregation with other generation on the distribution circuit, shall not cause any distribution protective devices and equipment (including, but not limited to, substation breakers, fuse cutouts,
and line reclosers), or Interconnection Requester equipment on the system to exceed 87.5% of the short-circuit interrupting capability; nor is the Generation Resource proposed for a circuit that already exceeds 87.5% of the short-circuit interrupting capability.

(6) For interconnection of a proposed single-phase or effectively grounded three-phase Generation Resource where the primary distribution system is three-phase, four-wire, the Generation Resource shall be connected line-to-neutral. For interconnection of a proposed single-phase or three-phase Generation Resource where the primary distribution system is three-phase, three-wire, the Generation Resource shall be connected line to line.

(7) If the proposed Generation Resource is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed Generation Resource, shall not exceed 20kW.

(8) If the Generation Resource is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition will not create an imbalance between the two sides of the 240 volt service of more than 20% of the service transformer nameplate.

(9) The proposed Generation Resource is not located in an area where there are known or posted transient stability limitations to generating units located in the general electric vicinity, including but not limited to known harmonic issues.

(10) No system modifications, in excess of limited preparations that do not necessitate a Facilities Study, are required to facilitate the interconnection of the Generation Resource.

(11) The aggregated generation, including the proposed Generation Resource, on a distribution circuit, will not cause any distribution protective devices and equipment, including but not limited to conductors, substation transformers, line stepdown transformers, substation breakers, fuse cutouts and line reclosers, or customer equipment on the system, to compromise the device’s continuous duty ratings and protection settings as determined by the Interconnecting Utility.

(12) Voltage drop caused by starting generation is within acceptable limits meaning that inrush current caused by the start up of the proposed Generation Resource up to once per hour, is not greater than 3% of the available fault current or does not cause greater than a 3% voltage deviation at the Point of Interconnection as modeled in an unbalanced load flow. Voltage drop due to starting the proposed Generation Resource more than once per hour meets a tighter inrush-current tolerance to be determined by the Interconnecting Utility. This criterion is applicable only to synchronous or induction
Generation Resources.

(13) The Interconnection Requester affirms that the proposed Generation Resource meets the applicable codes and standards of Section 5.514 or is a certified equipment package under Section 5.513. Flicker caused by the proposed Generation Resource shall comply with IEEE Std. 1453.

(14) For any single Generation Resource, the available utility short circuit current at the Point of Interconnection divided by the rated output current of the Generation Resource is no less than:

(a) 50 for Generation Resources of less than 100 kW;
(b) 40 for Generation Resources from 100 kW to less than 500 kW; and
(c) 20 for Generation Resources equal to or greater than 500 kW.

(D) If the proposed interconnection passes all of the applicable Fast Track Screening Criteria, the Interconnection Request shall be approved and the Application shall not require additional study as described in Sections 5.508, 5.509, and 5.510. The Utility shall provide the Interconnection Requester an executable interconnection agreement within five business days after the completion of the Fast Track Screening.

(E) If the proposed interconnection fails one or more of the Fast Track Screening Criteria, but the Interconnecting Utility determines that the Generation Resource may nevertheless be interconnected consistent with safety, reliability, and power quality standards, the Interconnecting Utility shall notify the Interconnection Requester in writing and provide an executable Interconnection Agreement within five (5) business days. The Interconnecting Utility shall provide, for each failed criterion, a technical justification in the Fast Track results regarding why the proposed Generation Resource may nevertheless be interconnected consistent with safety, reliability and power quality standards.

(F) If the proposed interconnection fails the Fast Track Screening Criteria, and the Interconnecting Utility does not or cannot determine from the initial review that the Generation Resource may nevertheless be interconnected consistent with safety, reliability, and power quality standards unless the Interconnection Requester is willing to consider minor modifications or further study, the Interconnecting Utility shall provide the Interconnection Requester with the opportunity to attend a Scoping Meeting. If the Interconnection Requester indicates in response to this opportunity that it does not want to hold a scoping meeting or proceed to Supplemental Review as described in section 5.507 or additional study as described in Sections 5.508, 5.509 and 5.510 the Application will be considered withdrawn.

(G) If mutually agreed upon, a Scoping Meeting to discuss available options may be scheduled and held within 10 business days of the Interconnecting Utility notifying the Interconnection Requester of the results of the review of the Fast Track
Screening Criteria. The purpose of the Scoping Meeting may be to review existing studies relevant to the Interconnection Requester’s interconnection Application, and/or to further discuss whether the Interconnecting Utility should perform a Supplemental Review as described in Section 5.507 or other additional study.

(H) At the time of notification of the Interconnecting Utility’s determination, or at the Scoping Meeting, the Utility shall:

(1) Offer to perform limited and low cost modification to the Interconnecting Utility’s electric system (e.g., changing meters, fuses, relay settings) and provide a non-binding good faith estimate of the cost to make such modifications to the Utility’s electric system. If the Interconnection Requester agrees to pay for the modifications to the Interconnecting Utility’s electric system, the Utility will provide the Interconnection Requester with an executable interconnection agreement within ten Business Days of the Scoping Meeting or, if there is no Scoping Meeting, within ten Business Days of the notification of the Interconnecting Utility’s determination; or

(2) Offer to perform a supplemental review in accordance with Section 5.507 and provide a non-binding good faith estimate of the costs of such review; or

(3) Obtain the Interconnection Requester’s agreement to continue evaluating the Interconnection Request under the Study Processes of Sections 5.508, 5.509, and 5.510.

(I) If the Interconnecting Utility and the Interconnection Requester agree to proceed with the interconnection Application and agree that a Supplemental Review should be performed, the procedures of Section 5.507 apply. If the Interconnecting Utility and the Interconnection Requester agree to proceed with the Interconnection Application and agree that a Feasibility Study should be performed, the procedures of Section 5.508 shall apply. If the Interconnecting Utility and the Interconnection Requester agree to proceed with the interconnection Application, but agree not to perform a Feasibility Study and to proceed directly to a System Impact Study or a Facilities Study, the procedures at Sections 5.509 or 5.5010, respectively, shall apply. If mutually agreed upon by the Interconnection Requester and the Interconnecting Utility, the Feasibility, System Impact, and/or Facilities Studies may be combined for the purpose of achieving cost and/or time savings.

5.507 Supplemental Review

(A) To accept the offer of a supplemental review, the Interconnection Requester shall agree in writing by signing the Supplemental Review Agreement and submitting a deposit for the estimated costs of the supplemental review in the amount of the Interconnecting Utility’s good faith estimate of the costs of such review, both within 15 business days of the offer. If the written agreement and deposit have not been received by the Interconnecting Utility within that timeframe, the Interconnection Request shall continue to be evaluated
under the Section 5.508 study process unless it is withdrawn by the Interconnection Requester.

(B) The Interconnection Requester shall be responsible for the Interconnecting Utility’s actual costs for conducting the supplemental review. With Board approval, Interconnecting Utilities may establish cost-based standard fee(s) for conducting a supplemental review. The Interconnection Requester must pay any review costs that exceed the deposit within 20 business days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the Interconnecting Utility will return such excess within 20 business days of the invoice without interest.

(C) Within 30 business days following receipt of the Supplemental Review Agreement and payment, the Interconnecting Utility shall (1) perform a supplemental review using the screens identified below and the analysis set forth in section 5.507(D); (2) notify in writing the Interconnection Requester of the results; and (3) include with the notification copies of the analysis and data underlying the Interconnecting Utility’s determinations, including under any Fast Track Screens that the proposed Generation Resource failed.

(1) Minimum Load Screen: Where 12 months of line section minimum load data (including onsite load but not station service load served by the proposed Generation Resource) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Generating Facility capacity on the line section is less than 100% of the minimum load for all line sections bounded by automatic sectionalizing devices upstream of the proposed Generation Resource. If minimum load data is not available, or cannot be calculated, estimated or determined, the Interconnecting Utility shall include the reason(s) that it is unable to calculate, estimate or determine minimum load in its supplemental review results notification under section (C).

a. The type of generation used by the proposed Generation Resource will be taken into account when calculating, estimating, or determining circuit or line section minimum load relevant for the application of screen (C)(1). Solar photovoltaic (PV) generation systems with no battery storage use daytime minimum load (e.g. 10 a.m. to 4 p.m. for fixed panel systems and 8 a.m. to 6 p.m. for PV systems utilizing tracking systems), while all other generation uses absolute minimum load.

b. When this screen is being applied to a Generation Resource that serves some station service load, only the net injection into the Interconnecting Utility’s electric system will be considered as part of the aggregate generation.

c. Interconnecting Utility will not consider as part of the aggregate generation for purposes of this screen generating facility capacity known to be already reflected in the minimum load data.
(2) Voltage and Power Quality Screen: In aggregate with existing generation on the line section: (1) the voltage regulation on the line section can be maintained in compliance with relevant requirements under all system conditions; (2) the voltage fluctuation is within acceptable limits as defined by Institute of Electrical and Electronics Engineers (IEEE) Standard 1453 and IEEE 1453.1.

(3) Safety and Reliability Screen: The location of the proposed Generation Resource and the aggregate generation capacity on the line section do not create impacts to safety or reliability that cannot be adequately addressed without application of the Study Process. The Interconnecting Utility shall give due consideration to the following and other factors in determining potential impacts to safety and reliability in applying this screen.

a. Whether the line section has significant minimum loading levels dominated by a small number of customers (e.g., several large commercial customers).

b. Whether the loading along the line section is uniform or even.

c. Whether the proposed Generation Resource is located in close proximity to the substation (i.e., less than 2.5 electrical circuit miles), and whether the line section from the substation to the Point of Interconnection is a Mainline rated for normal and emergency ampacity.

d. Whether the proposed Generation Resource incorporates a time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time.

e. Whether operational flexibility is reduced by the proposed Generation Resource, such that transfer of the line section(s) of the Generation Resource to a neighboring distribution circuit/substation may trigger overloads or voltage issues.

f. Whether the proposed Generation Resource employs equipment or systems certified by a recognized standards organization to address technical issues such as, but not limited to, islanding, reverse power flow, or voltage quality.

(D) The Supplemental Review shall assess whether failed criteria identified in the Fast Track can be addressed using known solutions that would not require a System Impact Study so that the Generation Resource may be interconnected consistent with safety, reliability, and power quality. The Supplemental Review analysis may include but is not limited to:

(1) Protection Device Loading and Coordination
(2) Thermal Loading
(3) Substation and Transmission Capacity  
(4) System Voltages  
  a. Steady State Voltage  
  b. Ground Fault Over Voltage  
  c. Natural transients  
  d. Generator Reconnection  
(5) Islanding  
(6) Impact to Affected Utilities  

(E) If the proposed interconnection passes the supplemental screens in Sections (C)(1), (C)(2), and (C)(3) above, or the Interconnecting Utility identifies known solutions through analysis conducted under Section (E) above, the Interconnection Request shall be approved and the Interconnecting Utility will provide the Interconnection Requester with an executable interconnection agreement within the timeframes established in sections (E)(1) and (E)(2) below.  

(1) If the Supplemental Review shows that the proposed interconnection can be interconnected consistent with safety, reliability, and power quality standards and does not require construction of facilities by the Interconnecting Utility on its own system, the Interconnection Agreement shall be provided within ten business days after the notification of the Supplemental Review results.  

(2) If the Supplemental Review shows that interconnection facilities or modifications to the Interconnecting Utility’s system are required for the proposed interconnection to be interconnected consistent with safety, reliability and power quality standards and does not require a Facilities Study as described in section 5.510, then the Interconnection Agreement, along with a non-binding good faith estimate for the interconnection facilities and/or minor modifications, shall be provided to the Interconnection Requester within 15 business days after receiving written notification of the supplemental review results.  

(G) If the Supplemental Review shows that interconnection facilities or modifications to the Interconnecting Utility’s system are required for the proposed interconnection to be interconnected consistent with safety, reliability, and power quality standards and also require a Facilities Study, but does not require a Feasibility or System Impact Study, the Project shall proceed to Facilities Study as described in section 5.510.  

(H) If the Supplemental Review indicates potential for adverse impacts and the Interconnection Requester does not withdraw its Interconnection Request, the procedures of Section 5.508 shall apply. If the Interconnecting Utility and the Interconnection Requester agree to proceed with the Interconnection Application, but agree not to perform a Feasibility Study and to proceed directly to a System Impact Study or a Facilities Study, the procedures at Sections 5.509 or 5.510, respectively, shall apply. If mutually agreed upon by the Interconnection Requester and the Interconnecting Utility, the Feasibility, System Impact, and/or Facilities Studies may be combined for purpose of achieving cost and/or time savings. If the Interconnection Requester does not reach any
of the agreements set forth in this section, the Interconnection Application shall be withdrawn.

5.508 Feasibility Study

(A) Within 5 business days after the close of the Scoping Meeting, or after the date of the decision not to hold a Scoping Meeting, the Interconnecting Utility shall provide the Interconnection Requester an executable Feasibility Study agreement including an outline of the scope of the study and a good faith estimate of the cost to perform the study. In order to remain in the Interconnecting Utility's Interconnection Queue, the Interconnection Requester must return, within 15 business days, an executed Feasibility Study agreement along with a deposit of the lesser of fifty percent of estimated Feasibility Study costs or $1,000. A model Feasibility Study agreement will be provided by the Board; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into a different arrangement.

(B) A Feasibility Study shall include the following analyses:

1) Initial identification of any instances where the short-circuit capability limits of any protective device (circuit breaker, recloser, fuse, etc.) would be exceeded as a result of the interconnection;

2) Initial identification of any thermal overload or voltage limit violations resulting from the interconnection;

3) Initial review of grounding requirements and system protection; and

4) Description and non-binding estimated cost of facilities required to interconnect the facility to an electric distribution power system or directly to a transmission system and to address the identified short-circuit and power-flow issues.

(C) A Feasibility Study shall model the impact of the Generation Resource regardless of purpose, in order to avoid the further expense and interruption of operation for reexamination of feasibility and impacts if the Interconnection Requester later changes the purpose for which the Generation Resource is being installed.

(D) A Feasibility Study shall include the feasibility of any interconnection at a proposed project site where there could be multiple potential Points of Interconnection, as requested by the Interconnection Requester.

(E) In performing the Feasibility Study, the Interconnecting Utility shall rely, to the extent reasonably practicable, on existing studies of recent vintage. The Interconnection Requester shall not be charged for such existing studies; however, the Interconnection Requester shall be responsible for charges associated with any new study or modifications to existing studies that are reasonably necessary to perform the Feasibility Study.
Feasibility Study Report and Cost Reconciliation

1) Once a Feasibility Study is completed, the Interconnecting Utility shall prepare a Feasibility Study Report, which describes the results of the Feasibility Study, and transmit it to the Interconnection Requester. Barring unusual circumstances outside of the Interconnecting Utility’s control, the Interconnecting Utility shall complete a Feasibility Study, and transmit the Feasibility Study Report to the Interconnection Requester, within 30 business days of the Interconnection Utility’s receipt of an executed Feasibility Study agreement and deposit as described in Section 5.508(A).

2) The Feasibility Study Report shall also include cost estimates for the Distribution Level System Impact Study, Transmission Level System Impact Study, and Facilities Study, to the extent that any of these studies are determined by the Feasibility Study to be required.

3) The Feasibility Study Report shall also include the applicable Study Agreement or Interconnection Agreement pursuant to Section 5.508(G), 5.508 (H) and 5.508 (I).

4) Cost reconciliation. Within 15 business days of submittal of the Feasibility Study Report, the Interconnecting Utility shall provide to the Interconnection Requester an invoice that includes a breakdown of the actual cost to perform the Feasibility Study. The Interconnection Requester must pay the full cost of the Feasibility Study. The Interconnecting Utility shall base all study fees on actual costs, which include, but are not limited to, salaries, overheads, and out-of-pocket costs including costs billed by other entities for new studies or portions thereof which the Interconnecting Utility does not itself perform [see 5.511(G)]. If the cost of the Feasibility Study exceeds the deposit, the Interconnection Requester must pay the invoiced amount (cost of the Feasibility Study minus the deposit), without interest, within 25 business days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the cost of the Feasibility Study, the Interconnecting Utility shall refund such excess, without interest, within 35 business days of submittal of the Feasibility Study Report.

(G) If a Feasibility Study shows no potential adverse impacts on the electric system, and no additional facilities are required, the Interconnecting Utility shall send the Interconnection Requester an executable Interconnection Agreement within 10 business days after delivery of the Feasibility Study Report. A model Interconnection Agreement and associated Technical Requirements and Operator Protocols will be provided by the Board; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into different arrangements.

(H) If a Feasibility Study shows no potential adverse impacts on the electric system,
but additional facilities are required, the Interconnecting Utility shall send the Interconnection Requester an executable Facilities Study agreement, including an outline of the scope of the study and a good-faith estimate of the cost to perform the study, pursuant to Section 5.510, within 5 business days after delivery of the Feasibility Study Report. The Board will provide a model Facilities Study agreement; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into a different arrangement.

(I) If a Feasibility Study shows the potential for adverse impacts on either the distribution system or the transmission system, the review process shall proceed to the System Impact Study, and the Interconnecting Utility shall send the Interconnection Requester an executable System Impact Study agreement, including an outline of the scope of the study and a good-faith estimate of the cost to perform the study, pursuant to Section 5.509 within 5 business days of the delivery of the Feasibility Study. The executable System Impact Study agreement shall specify whether it and the cost estimate are for a Distribution Level Study, Transmission Level Study, or both. The Board will provide a model System Impact Study agreement; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into a different arrangement.

5.509 System Impact Study

(A) In order to remain in the Interconnecting Utility's Interconnection Queue, the Interconnection Requester must return, within 15 business days, an executed System Impact Study agreement along with a deposit equivalent to the estimated cost of the study. A model System Impact Study agreement will be provided by the Board; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into a different arrangement.

(B) A System Impact Study includes two sub-studies: a Transmission Level Study and a Distribution Level Study. One or both of the sub-studies may be performed, depending on the specific circumstances of the Application and the findings of the Fast Track, Supplemental Review, Scoping Meeting and/or Feasibility Study. If the Fast Track, Supplemental Review, Scoping Meeting or Feasibility Study identifies potential adverse impacts on the distribution system, a Distribution Level Study shall be performed. If the Scoping Meeting, Feasibility Study, or Distribution Level Study identifies potential adverse impacts on the transmission system, a Transmission Level Study shall be performed.

1) The Distribution Level System Impact Study shall consist of a distribution load-flow study, an analysis of equipment-interrupting ratings, protection coordination study, voltage drop and flicker studies, protection and set point coordination studies, and grounding reviews, and the impact on system operation, as necessary.

2) The Transmission Level System Impact Study shall consist of a
short-circuit analysis, a stability analysis, a power-flow analysis, voltage-drop and flicker studies, protection and set-point-coordination studies, and grounding reviews, as necessary.

(C) The purpose of the System Impact Study shall be to identify and specify the impacts to electric transmission and/or distribution system stability and reliability that would result if the proposed Generation Resource were interconnected without project modifications or system modifications, focusing on the adverse impacts identified in the Fast Track, Supplemental Review, Scoping Meeting or Feasibility Study, and to identify and study any additional potential impacts.

(D) System Impact Study Report and Cost Reconciliation

1) Once a System Impact Study is completed, the Interconnecting Utility shall prepare a System Impact Study Report and transmit it to the Interconnection Requester. Barring unusual circumstances outside of the Interconnecting Utility's control, the System Impact Study determined to be necessary by the Feasibility Study or Scoping Meeting shall be completed and transmitted to the Interconnection Requester within 45 business days from receipt of the System Impact Study agreement and deposit if a Feasibility Study was performed, and 60 business days from receipt of the System Impact Study agreement and deposit if a Feasibility Study was not performed.

2) The System Impact Study Report shall state the assumptions upon which the System Impact Study is based, state the results of the analyses, and provide the requirements for, or potential impediments to, providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and to implement the interconnection. The System Impact Study shall provide a list of facilities that are required as a result of the Interconnection Requester's Application and a non-binding good-faith estimate of cost responsibility and a non-binding good-faith estimate of time to construct. The System Impact Study Report shall also include a Facilities Study agreement or Interconnection Agreement pursuant to Sections 5.509(H) and 5.509(I).

3) Cost reconciliation. Within 35 business days of submittal of the System Impact Study Report, the Interconnecting Utility shall provide to the Interconnection Requester an invoice that includes a breakdown of the actual cost to perform the System Impact Study. The Interconnection Requester must pay the full cost of the System Impact Study. The Interconnecting Utility shall base all study fees on actual costs, which include, but are not limited to, salaries, overheads, and out-of-pocket costs including costs billed by other entities for new studies or portions thereof which the Interconnecting Utility does not
itself perform [see 5.511(G)]. If the cost of the System Impact Study exceeds the deposit, the Interconnection Requester must pay the invoiced amount (cost of the System Impact Study minus the deposit), without interest, within 35 business days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the cost of the System Impact Study, the Interconnecting Utility shall refund such excess, without interest, within 35 business days of submittal of the System Impact Study Report.

(E) If, while conducting the System Impact Study outlined in the executed System Impact Study agreement, the Interconnecting Utility determines that studies beyond those contained in the executed System Impact Study Agreement are required (for instance, if the Feasibility Study recommended that a Distribution Level Study be conducted, and, during the course of conducting the Distribution Level Study, the Interconnecting Utility determined that a Transmission Level Study is also required), the Interconnecting Utility shall, within 5 business days of making that determination, send the Interconnection Requester a supplemental System Impact Study agreement, including an outline of the scope of the supplemental study and a good faith estimate of the cost to perform the supplemental study. In order to remain in the interconnection queue, the Interconnection Requester must return an executed supplemental System Impact Study Agreement within 15 business days with a deposit equivalent to the estimated cost of the supplemental study. Barring unusual circumstances outside of the Interconnecting Utility's control, a supplemental System Impact Study shall be completed and transmitted to the Interconnection Requester within 45 business days of the receipt of the supplemental System Impact Study agreement. The report and cost reconciliation shall follow the procedures detailed in Section 5.509(D), above.

(F) In instances where a Feasibility Study or a System Impact Study shows potential impacts on the transmission system, within 5 business days following transmittal of the Feasibility Study Report or System Impact Study report, the Interconnecting Utility shall notify the Affected Systems.

(G) Where transmission systems and electric power distribution systems have separate owners, such as is the case with transmission-dependent utilities, whether investor-owned or not, the Interconnection Requester or Interconnecting Utility may apply to the nearest transmission utility providing transmission service to the transmission-dependent utility to request project coordination. Affected Systems shall participate in the study and provide all information necessary to prepare the study.

(H) If a System Impact Study shows that no additional facilities are required, or that the only additional facilities are not transmission voltage equipment or are of a routine nature for the utility, the Interconnecting Utility shall send the Interconnection Requester an executable Interconnection Agreement within 15 business days after delivery of the System Impact Study Report. A model Interconnection Agreement and associated Technical Requirements and Operator Protocols will be provided by
the Board; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into different arrangements.

(I) If a System Impact Study shows that additional facilities are required, the Interconnecting Utility shall send the Interconnection Requester an executable Facilities Study agreement, including an outline of the scope of the study and a good-faith estimate of the cost to perform the study, pursuant to Section 5.510, within 5 business days after delivery of the System Impact Study Report. The Board will provide a model Facilities Study agreement; however, the Interconnecting Utility and the Interconnection Requester may voluntarily enter into a different arrangement.

5.510 Facilities Study

(A) In order to remain in the Interconnecting Utility's Interconnection Queue, the Interconnection Requester must return, within 15 business days, an executed Facilities Study agreement along with a deposit equivalent to the estimated cost of the study.

(B) Facilities Study Preparation. Transmission-system and/or distribution-system interconnection design for any required Interconnection Facilities and/or System Upgrades shall be performed under a Facilities Study agreement between the Interconnection Requester and the Interconnecting Utility.

(C) In some cases, the Interconnection Requester and the Interconnecting Utility may reach agreement allowing the Interconnection Requester to separately arrange for the design of some of the required Interconnection Facilities and/or System Upgrades. In such cases, facilities design shall be reviewed, and modified as necessary by the Interconnecting Utility, prior to acceptance under the provisions of the Facilities Study agreement. If the parties agree to separately arrange for design and construction, the Interconnecting Utility shall make sufficient information available to the Interconnection Requester to permit the Interconnection Requester to obtain an independent design and cost estimate for any necessary facilities. This provision shall not prohibit the Interconnecting Utility and the Interconnection Requester from reaching agreement to protect information one or the other deems confidential, and shall not require the Interconnecting Utility to disclose information it is otherwise obliged not to disclose or affect the Board's authority to compel or restrict disclosure of information.

(D) System Upgrades. In cases where System Upgrades are required, the Facilities Study shall be completed and a Facilities Study Report transmitted to the Interconnection Requester within 45 business days of the receipt of the Facilities Study agreement. In cases where no System Upgrades are required, and the required facilities are limited to Interconnection Facilities, the Facilities Study shall be completed and a Facilities Study Report transmitted to the Interconnection Requester within 30 business days. The Facilities Study Report
shall include a good-faith estimate of the cost of any recommended System
Upgrades or Interconnection Facilities.

(E) The Interconnecting Utility shall send the Interconnection Requester an
executable Interconnection Agreement within 15 business days after delivery of
the Facilities Study Report.

(F) Cost reconciliation. Within 25 business days of submittal of the Facilities Study
Report, the Interconnecting Utility shall provide to the Interconnection Requester an
invoice that includes a breakdown of the actual cost to perform the Facilities Study.
The Interconnection Requester must pay the full cost of the Facilities Study. The
Interconnecting Utility shall base all study fees on actual costs, which include, but
are not limited to, salaries, overheads, and out-of-pocket costs including costs billed
by other entities for new studies or portions thereof which the Interconnecting
Utility does not itself perform [see 5.511(G)]. If the cost of the Facilities Study
exceeds the deposit, the Interconnection Requester must pay the invoiced amount
(cost of the Facilities Study minus the deposit), without interest, within 35 business
days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the
cost of the Facilities Study, the Interconnecting Utility shall refund such excess,
without interest, within 35 business days of submittal of the Facilities Study Report.

(G) Costs of Facilities and Cost Responsibility. Where additional facilities,
Interconnection Facilities, or System Upgrades are required to permit the
interconnection of a Generation Resource, the Interconnecting Utility shall provide
a detailed good-faith estimate of the costs, and the Interconnection Requester shall
pay the full amount of the estimate or, if such costs are covered by an
Interconnection, Line Extension or other tariff, said charges shall be billed and
paid pursuant to the tariff.

(H) Grouping of Facilities. An Interconnecting Utility may propose to group facilities
required for more than one Interconnection Requester in order to minimize
facilities’ costs through economies of scale, but any Interconnection Requester may
require the installation of facilities required for its own Generation Resource if it is
willing to pay the costs of those facilities.

5.511 Terms Applicable to All Interconnection Applications

(A) The Interconnection Requester is responsible for meeting all applicable
codes and standards of Section 5.514 or interconnection is accomplished
by a certified equipment package under Section 5.513.

(B) Interconnection Agreement. Upon completion of the necessary studies, if any, the
Application shall be approved and the Interconnecting Utility shall provide the
Interconnection Requester an executable Interconnection Agreement with necessary
attachments within the time limits identified in the portions of This Rule detailing
the study processes used for the proposed Generation Resource. The
Interconnection Requester's Application shall be deemed withdrawn and the Interconnection Requester shall lose Interconnection Queue position unless the Interconnection Requester returns the executed Interconnection Agreement by the later of 1) three months after provision of the executable Interconnection Agreement or 2) 30 days after the issuance the Certificate of Public Good for the Generation Resource but in no case later than one year after provision of the executable Interconnection Agreement. The Interconnection Requester bears all risk if, during the period between completion of Studies and the return of the executed Interconnection Agreement, (i) network conditions change such that the Studies' results are no longer valid and the Studies need to be revisited and updated at the Interconnection Requester's cost and (ii) the cost estimate for System Upgrades and Interconnection Facilities is no longer valid, except to the extent that these changed circumstances are known or could reasonably have been foreseen by the Interconnecting Utility.

(1) The Interconnection Agreement shall require that Voltage Ride Through capability, Frequency Ride Through capability, and Smart Inverter functionality comply with the standards required by Section 5.514. If mutually agreed upon by the Interconnecting Utility and Interconnection Requester, the Interconnection Agreement shall require enhanced Voltage Ride Through, Frequency Ride Through, or other Smart Inverter functionality, consistent with the standards required by Section 5.514 and with Good Utility Practice.

(C) Reasonable Efforts. The Interconnecting Utility shall make reasonable efforts to meet all time frames provided in This Rule unless the Interconnecting Utility and the Interconnection Requester agree to a different schedule. If an Interconnecting Utility cannot meet a deadline provided herein, it shall notify the Interconnection Requester, explain the reason for the failure to meet the deadline and provide an estimated time by which it will complete the applicable interconnection procedure. The Interconnecting Utility shall maintain records, subject to audit, of all Generation Resource Applications received, the times required to complete Application approvals and disapprovals and justification for the actions taken on the Applications. If costs arise from delay despite reasonable efforts of the Interconnecting Utility, these costs shall be borne by the Interconnection Requester. If costs arise from delay resulting from a lack of reasonable efforts on the part of the Interconnecting Utility, such costs shall be borne by the Interconnecting Utility.

(D) Dispute Resolution. If a dispute arises at any time during these procedures, either the Interconnection Requester or the Interconnecting Utility may seek immediate resolution by written petition to the Board, with copies to the other party and the Vermont Department of Public Service, stating the issues in dispute. Pursuit of dispute resolution shall not affect an Interconnection Requester's Application with regard to consideration for interconnection, nor position in an Interconnection Queue.

(E) Interconnection Metering. Any metering necessitated by the interconnection
of the Generation Resource shall be installed at the Interconnection Requester's expense in accordance with the Interconnecting Utility's reasonable specifications.

(F) Commissioning. Commissioning tests of an Interconnection Requester's installed equipment shall be performed pursuant to applicable codes and standards as identified by the parties in the Interconnection Agreement. The Interconnecting Utility shall be given 10 business days' written notice, or as otherwise mutually agreed by the Parties, of the tests and may have one or more of its representatives present to witness the commissioning tests.

(G) As Built Drawings. Interconnection Requester shall, within 30 days of the Generation in service date, supply to the Interconnecting Utility “As Built” drawings depicting the details of what was installed during the construction process. This drawing shall be stamped by a professional engineer. Any deviation from the Application not previously approved by the Interconnecting Utility shall be addressed pursuant to the Interconnection Agreement.

(H) Notification Prior to Exceeding Cost Estimate. For any study, Interconnection Facilities or System Upgrades for which these Rules require the Interconnection Requester to bear costs, the Interconnecting Utility shall, prior to exceeding a previously-provided cost estimate, promptly notify the Interconnection Requester if such costs are likely to exceed the previously-provided estimate and shall provide the Requester with a revised total estimated cost for the study. The Interconnecting Utility shall proceed with completing the study, Interconnection Facilities or System Upgrades unless and until requested to cease processing the Application by the Interconnection Requester, in which case the Requester shall be responsible for all such costs incurred to date and the Application shall be deemed withdrawn.

(I) Pursuant to 5.508, 5.509, and 5.5010, for those portions, if any, of the study fees for the Feasibility, System Impact, and Facilities Studies which the Interconnecting Utility bills to the Interconnection Requester and for which the Interconnecting Utility could also recover in its rates, the Interconnecting Utility shall book this income separately.

5.512 Disconnection

(A) The following requirements shall govern disconnection from the electrical system of a Generation Resource that was interconnected under these procedures. These requirements apply to such Generation Resources only and do not supplant Board Rules 3.300 and 3.400 relating to utility disconnection in general.

(B) The Interconnection Requester retains the option to disconnect temporarily from the Interconnecting Utility's system at any time. Such temporary disconnection shall not be a termination of any Interconnection Agreement unless the Interconnection Requester exercises its termination rights under such agreement.
(C) In the event an Interconnecting Utility needs to perform an Emergency disconnection of a Generation Resource, the Interconnecting Utility shall notify the Interconnection Requester within 24 hours after the disconnection.

(1) If the Emergency is not caused by the Generation Resource, the Interconnecting Utility shall assist the Interconnection Requester with reconnecting the Generation Resource upon cessation of the Emergency.

(2) If the Emergency is caused by the Generation Resource, the Interconnecting Utility shall communicate the nature of the problem to the Interconnection Requester within 5 days, and work with the Interconnection Requester to resolve the problem. If the problem has not been resolved within 30 days of an Emergency disconnection, the Interconnecting Utility shall file a disconnection petition with the Board. In any proceeding on such a petition, the Interconnecting Utility shall bear the burden of proof to demonstrate the reasonableness of disconnection.

(D) Non-Emergency disconnections shall follow the same procedure as Emergency disconnections outlined above, except that the Interconnecting Utility shall give written notice of the disconnection no earlier than 10 days and no later than 7 days prior to the first date on which disconnection of the Generation Resource may occur. Such notice shall communicate the reason for disconnection to the Interconnection Requester and the expected duration of the disconnection. An Interconnecting Utility may obtain, at the discretion of the Interconnection Requester, an Interconnection Requester's written agreement to notice requirements for non-Emergency disconnections which are different from those set forth in these procedures, provided that the Interconnecting Utility first advises the Interconnection Requester of its rights under This Rule.

(E) An Interconnection Requester whose Generation Resource is involuntarily disconnected may file a complaint with the Board at any time following disconnection. The Board may hold a hearing to determine whether the Generation Resource should be reconnected to the Interconnecting Utility. In the event of the filing of such a complaint, the Interconnecting Utility shall bear the burden of proof to demonstrate the reasonableness of disconnection.

5.513 Certification of Generation Resource Equipment Packages

(A) A Generation Resource equipment package shall be considered certified for interconnected operation to an electric power distribution system if it has been approved under the certification process described below.

An equipment package shall be considered certified for interconnected operation if it has been submitted, tested and listed by a nationally recognized testing and certification laboratory or approved by the U.S. Department of Energy for continuous
utility interactive operation in compliance with the applicable Codes and Standards listed in Section 5.514, above. An "equipment package" shall include all interface components including switchgear, inverters, or other interface devices and may include an integrated Generation Resource. If the equipment package has been tested and listed as an integrated package which includes a Generation Resource, it shall not require further design review, testing or additional equipment to meet the certification requirements. If the equipment package includes only the interface components (switchgear, inverters, or other interface devices), then an Interconnection Requester must demonstrate to the Interconnecting Utility that the Generation Resource being utilized with the equipment package is compatible with the equipment package and consistent with the testing and listing specified for the package. If the Generation Resource combined with the equipment package is consistent with the testing and listing performed by the nationally recognized testing and certification laboratory, no further design review, testing or additional equipment shall be required to meet the certification requirements. A certified equipment package does not include equipment provided by the Interconnecting Utility, nor does certification necessarily exempt an equipment package or Generation Resource from commissioning testing required for installation and operation.

5.514 Codes and Standards

When any listed version of the following codes and standards is superseded by a revision approved by the standards-making organization, then the revision shall be applied where these codes and standards are referenced in This Rule. Applications that are date-and-time-stamped on or before six months after the revision date may follow the previous version of the standard, unless an immediate threat to safety and reliability exists that requires the retrofit of all similarly situated equipment. Applications that are date-and-time-stamped later than six months after the revision date must follow the revised standard.

(A) IEEE 1547 Series of Standards for Interconnecting Distributed Resources with Electric Power Systems as adopted and successor or related IEEE-approved standards.

(B) UL 1741 Inverters, Converters, and Controllers for Use in Independent Power Systems.

(C) NFPA 70 National Electrical Code - NEC


(H) IEEE Standard C62.41.2 IEEE Recommended Practice on Characterization of Surges in Low Voltage (1000V and Less) AC Power Circuits.


(J) ANSI C84.1 Electric Power Systems and Equipment - Voltage Ratings (60 Hertz).

(K) IEEE Standard 100 IEEE Standard Dictionary of Electrical and Electronic Terms.

(L) NEMA MG 1 Motors and Small Resources.


(O) IEEE Standard 1453.1-2012 IEEE Adoption of IEC TR 61000-3-7 2008 Assessment of emission limits for the connection of fluctuating installations to MV, HV and EHV power systems