PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held November 10, 2005

Commissioners Present:

Wendell F. Holland, Chairman
James H. Cawley, Vice Chairman
Bill Shane
Kim Pizzingrilli
Terrance J. Fitzpatrick

Proposed Rulemaking Re Interconnection Standards for Customer-generators pursuant to Section 5 of the Alternative Energy Portfolio Standards Act, 73 P.S. § 1648.5.	L-00050175
Implementation of the Alternative Energy Portfolio Standards Act of 2004: Interconnection Standards	M-00051865

PROPOSED RULEMAKING ORDER

BY THE COMMISSION:

The Alternative Energy Portfolio Standards Act of 2004, 73 P.S. §§ 1648.1-1648.8 (the Act), includes directives that the Commission develop regulations setting forth interconnection standards for customer-generators. In accordance with Section 5 of the Act, 73 P.S. § 1648.5, the Commission formally commences its rulemaking process to establish regulations governing interconnection for customer-generators. The Commission seeks comments from all interested parties on these proposed regulations,

which are found at Annex A to this Order. Additionally, the Commission will close the Net Metering sub-group as that sub-group has reached its goal by way of this proposed rulemaking Order and the companion rulemaking Order proposing regulations which set forth net metering standards.

BACKGROUND[1]

Section 5 of the Act provides as follows:

> The commission shall develop technical and net metering interconnection rules for customer-generators intending to operate renewable onsite generators in parallel with the electric utility grid, consistent with rules developed in other states within the service region of the regional transmission organization that manages the transmission system in any part of this Commonwealth. The commission shall convene a stakeholder process to develop Statewide technical and net metering rules for customer-generators. The commission shall develop these rules within nine months of the effective date of this act.

73 P.S. § 1648.5.

On March 3, 2005, the Commission convened an Alternative Energy Portfolio Standards Working Group (AEPS WG). The AEPS WG was established in order to provide a forum for considering the technical standards, business rules and regulatory

[1] In our Implementation Order entered March 25, 2005, at this docket, we stated that we would use the Advanced Notice of Proposed Rulemaking proceeding at L-00040168 (Order entered November 19, 2004) as a means to initiate this interconnection rulemaking process. However, with the enactment of the Energy Policy Act of 2005, we have decided to hold the November 19, 2004 Order in abeyance and issue a new docket number for this proceeding, specific to the interconnection standards rulemaking under the Act.

framework necessary for the Act's implementation. The Net Metering sub-group was formed out of the AEPS WG and was specifically tasked with developing proposed regulations governing net metering and interconnection standards.

The Net Metering sub-group has met on several occasions since March 3 to discuss and develop a set of proposed regulations in two parts. First, the Net Metering sub-group focused on net metering. Second, the Net Metering sub-group focused on interconnection standards, which is the subject of this proposed rulemaking proceeding.

Participants in the Net Metering sub-group have included representatives from Commission Staff, the Department of Environmental Protection (DEP), the Energy Association of Pennsylvania (EAPA) and several of its member companies, the Pennsylvania Farm Bureau, the Office of Consumer Advocate (OCA), the Office of Small Business Advocate (OSBA), Citizens for Pennsylvania's Future (Penn Future), the Small Generator Coalition (SGC) with the Solar Energy Industries Association and several similar entities.

At the initial meeting, participants were requested to discuss various issues which any rulemaking involving interconnection standards would need to address. As the Net Metering sub-group moved forward with the interconnection standards stakeholder process, the Commission determined that the Mid-Atlantic Distributed Resource Initiative (MADRI) was also moving forward with a stakeholder process to develop model interconnection standards for small generators in the PJM Interconnection L.L.C. (PJM) footprint. MADRI is comprised of the public utility commissions of Pennsylvania, Delaware, the District of Columbia, New Jersey and Maryland, along with the United States' Department of Energy and PJM. Similar to the Pennsylvania process, stakeholders from the utility industry, consumer organizations, distributed generation

interest groups and vendors along with the MADRI members were invited to participate in developing model interconnection standards.

On May 15, 2005, the Commission notified the Net Metering sub-group that it would hold the Pennsylvania interconnection standards process in abeyance, pending the development of a uniform model by the MADRI stakeholder process. Participants in Pennsylvania's Net Metering sub-group were strongly encouraged to participate in the MADRI interconnection process. Participants were advised that the Commission Staff would use the MADRI model as the basis for the Staff proposal which would lead to this Order proposing the interconnection standards rulemaking.

Following several meetings held in June, July and August of 2005, the MADRI stakeholder group advised Commission Staff that a draft model addressing interconnection standards was in sufficient form to merit consideration in the Pennsylvania process. Commission Staff received the MADRI model on or about August 19, 2005. On August 29, 2005, Staff issued its initial proposal (initial Staff proposal) to the Pennsylvania Net Metering sub-group and requested comments on or before September 19, 2005. The initial Staff proposal was based upon the MADRI model interconnection standards. In the notice for comments, Staff identified those areas where the initial Staff proposal modified the MADRI model and invited comments specifically directed to those modifications as well as any other areas participants wished to address.

Following the receipt of comments to the initial Staff proposal, Commission Staff developed the recommendation now before us. This Staff proposal was developed based upon the MADRI model interconnection standards as of August 19, 2005, the initial Staff proposal which modified that model, and comments submitted through the Net Metering sub-group process. The foregoing is consistent with the Act's mandate that these regulations be developed through a stakeholder process.

DISCUSSION

The Act provides a great deal of flexibility to the Commission regarding net metering and interconnection, providing only that the regulations are to be developed through a stakeholder process and, to the extent possible, regulations promulgated here should be "consistent with rules defined in other states" within the transmission zones of regional transmission organizations serving Pennsylvania. As we have noted above, the proposal now before us has been developed using the MADRI stakeholder process as well as the Pennsylvania specific Net Metering sub-group. Certainly, the MADRI process developed its model with a view to rules and circumstances existing in states within the PJM footprint. During the consideration of the MADRI model and its own modifications, Commission Staff has also continued to monitor other states and their efforts with regard to interconnection.

The proposed interconnection standards are consistent with the rules now in place in other jurisdictions within the transmission zones of regional transmission organizations serving Pennsylvania. In addition, the proposed regulations have been drafted with a view towards promoting onsite generation by customer-generators using renewable resources, consistent with the over-arching goal of the Act. Accordingly, the proposed regulations strive to eliminate barriers which may have previously existed with regard to interconnection while ensuring that interconnection by customer-generators will not pose unnecessary risks to the electric distribution systems in the Commonwealth nor unduly burden other customers on a particular electric distribution company's (EDC) system.

As noted in the companion net metering rulemaking, the Commission is proposing to add Chapter 75 to its regulations. Chapter 75 will contain many of the regulations needed to implement the Act. Proposed Subchapter A of Chapter 75 contains a set of

definitions for terms that will be used throughout Chapter 75. Proposed Subchapter B contains the net metering regulations. In this Order, we propose to add Subchapter C, found in Annex A to this Order, to Chapter 75.

A. Scope

This section endeavors to set forth the scope of the interconnection standards adopted under the Act. In the initial Staff proposal, the Scope of the regulations was described as applying to residential and small commercial customers. In the net metering rulemaking, several participants commented that use of the phrase "residential and small commercial customers" had the potential of excluding some agricultural customers who otherwise would be considered "customer-generators" under the Act.

Specific comments were not received on the proposed scope in this rulemaking. However, we have modified the initial Staff proposal to be consistent with the scope provided in the net metering rulemaking. As we stated there, paraphrasing the Act is the best method of setting forth the scope of the regulations. The Act expressly provides that the net metering and interconnection regulations are to be developed for "customer-generators." That term is defined in the Act and has specific capacity limits in place. Accordingly, the proposed scope of the regulations provides that they apply to EDCs which have customer-generators who intend to pursue net metering and interconnection opportunities in accordance with the Act.

B. Interconnection definitions

Several new definitions are set forth in Subchapter C that were not in the initial Staff proposal. Definitions for "Adverse System Impact," "Area Network," "Interconnection Facilities," and "Queue Position" have been developed, among others. Several participants proposed ministerial edits to definitions which provided greater clarity and they have been adopted in this proposed rulemaking. For example, one of the participants suggested modification of the definition of "Small Generator Facility" to delete material that was not properly within a definition. In addition, we will eliminate several definitions from the Staff proposal since they have been included in proposed Subchapter A in the net metering rulemaking and need not be repeated here. We also point out that the definition of "Adverse System Impact" has been modified to provide that such an impact occurs when a negative effect compromises the safety and reliability of the electric distribution system. We have deleted the word "may" from the definition.

One of the comments suggested that the definition of "Certification of Completion" include the possibility of using forms used by local inspection authorities to signify completion of any required local inspections. We have modified that definition consistent with that comment. We have also eliminated the definition of PJM Interconnection L.L.C. and used the more encompassing "Regional Transmission Organization" or "RTO." That term is defined in proposed Subchapter A contained in the Net Metering rulemaking.

One issue has been raised by the EAPA. The EAPA recommends the addition of a definition for "Affected System." The EAPA suggests that there will be situations where interconnection of a customer-generator may have an impact on a neighboring EDC, particularly for higher capacity installations. Accordingly, the EAPA recommends adding "Affected System" to the definitions and providing a mechanism for system study

and accounting/cost allocation in these situations. The Commission requests comments specifically addressing this issue as presented by the EAPA in its comments to the initial Staff proposal.[2] Comments in support of the EAPA position should also address the language to be used for the definition and its implementation in the review levels.

C. General Interconnection Provisions

This section describes the procedures for small generators with a nameplate capacity of up to two megawatts who wish to interconnect to an EDC's electric distribution system. The procedures divide the process into four distinct review screens, Levels 1, 2, 3, and 4, depending on the size and nature of the interconnection equipment involved. It should be noted that the initial Staff proposal provided for a Level 3A, but no level 4. Several comments suggested changing the Level 3A review to Level 4 for the sake of clarity. We have adopted that comment.

Level 1 projects are those which: a) have a nameplate capacity of 10 kW or less; and, b) are inverter based using customer interconnection equipment that is certified.

Level 2 projects are those which: a) have a nameplate capacity rating which is 2 MW or less; b) are inverter based; c) have received certification of the customer's interconnection equipment or review of the generator facility under Level 1 was not approved.

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[2] The EAPA comments to the initial Staff proposal may be found at this Commission's website at www.puc.state.pa.us in the electricity/issues/Alternative Energy Portfolio Standards tabs.

Level 3 projects are those which: a) have a nameplate capacity of 2 MW or less; b) do not qualify for either Level 1 or Level 2 review procedures or have been reviewed under Level 1 or Level 2 process but have not been approved for interconnection.

Interconnection customers who do not qualify for Level 1 or Level 2 review and do not export power to the grid may request to be evaluated under Level 4, which is an expedited review process.

West Penn Power raised the concern that the timelines for application review may need to be extended in emergencies when EDC employees that ordinarily review applications are temporarily assigned to emergency functions. Initially, it appears that these concerns can be addressed on a case-by-case basis through a waiver or some other method rather than providing specific regulatory treatment. However, the Commission specifically requests comments on this issue.

The Level 2 review process is limited to inverter based equipment. Penn Future and the SGC suggested that this restriction should be removed. The SGC noted that the limitation for inverter based equipment in a Level 2 review is not present in the Federal Energy Regulatory Commission's (FERC) proposed uniform interconnection standards (FERC Order 2006). Conversely, Staff has received comments that other types of equipment could present technical problems which a Level 2 review is not designed to address. The Commission requests comments on this issue. Please provide specific details in support of any comments filed.

The Staff proposal provides that an interconnection request for an increase in capacity is to be evaluated on the basis of the total nameplate capacity. Penn Future and the SGC suggested that the evaluation should be based on the new incremental addition only. In order to ensure system reliability and to remain within the mandate of the Act,

Staff believes that the review must be based on the total nameplate capacity of the interconnection facility. Any comments on this issue should specifically address the concern that any interconnection review must evaluate the total capacity which may flow onto an EDC's electric distribution system at a given point.

The EDC is required to maintain records for three years on interconnection requests received, time required to approve or disapprove, and justification for the action taken. Penn Future and SGC support this requirement and suggest that this record keeping be expanded into a report requirement. Penn Future also suggests that additional data should be collected on the total number of interconnection customer requests, the timeliness of processing, issues raised and their resolution. On the basis of these comments, we have expanded upon the reporting requirements that were originally presented in the initial Staff proposal. The report will be expanded to include: the total number of interconnection customer requests; the number of requests denied or moved to another review level; and, the number of requests that were not processed within established timelines. We believe that this provides adequate information for the Commission to monitor the process without imposing undue reporting burdens on the EDCs.

An EDC may propose to interconnect more than one small generator facility at a single point of interconnection in order to minimize cost. The OSBA commented that the regulation does not explicitly state that the EDC is to bear the cost of the single point interconnection. The Commission seeks comments on this issue.

The lack of a requirement for a readily accessible external AC disconnect switch was the subject of much discussion and comment. Many participants argued that the external switch was unnecessary if certified inverter equipment was used. They suggested that the running of cable and other equipment would make the external switch too costly

with little or no additional benefit. The EDCs strongly advocated the need for a readily accessible disconnect switch for worker safety and system reliability. A compromise position was presented that proposed the use of a lock box to house a key that would allow the EDC to gain access to the interconnection equipment whether it was inside the structure or elsewhere on the property.

We believe the customer should be given the choice of installing an accessible external disconnect switch or a lockbox to hold a key to provide entry to the interconnection facility. The customer will allow the EDC to place a placard in a location of the EDC's choosing that gives instructions on how to gain access to the isolation device. We have modified the initial Staff proposal and specifically request comments on this issue.

For interconnection of a proposed small generator facility to the load side of spot network protectors, the proposed small generator facility must utilize an inverter-based equipment package, the interconnection equipment must be certified and the aggregated other generation on that spot network may not exceed 5% of the spot network's maximum load. The EAPA commented that a 50 kW cap in addition to the 5% requirement is necessary for system reliability and safety. The Commission requests additional comments on this issue. Comments should provide detailed technical information regarding why a specific kilowatt cap is necessary in addition to the percentage of load cap.

The review periods for customer generator applications follow the MADRI recommendations. Certain parties suggested that the review periods were too long. The projects at issue will normally have a 10 to 20 year useful life. On that basis, we believe that a review period of 25-35 days as opposed to 10-15 days will not significantly impact the feasibility of the project or create a barrier to entry. At the same time, the longer

review periods will permit EDCs to review the applications without undue haste or require significant personnel additions. Any comments on these timelines should specifically explain why shorter time frames will provide substantial benefits to the applicant while not imposing substantial hardships on the EDCs.

The OCA suggested that under the Level 1 review we clarify that the EDC has 10 days to determine that the application is complete in addition to the 15 days that the EDC has to determine that the equipment can be interconnected safely and reliably. This is the correct interpretation. The EDC has a total of up to 25 days to determine that the application is complete and that the equipment can be interconnected safely.

The Staff proposal provides that distribution protective devices are not to be exposed to fault currents exceeding 85% of the short circuit interrupting capability. The SGC suggested that 85% was too low and wanted the level raised to at least 90%. Comments provided by an EDC suggested 82% was more appropriate. The EAPA argued that 80% is the appropriate limit. Commission Staff suggests that a 90% cap offers too little margin for error and an 80% cap is too conservative based on the EDC's own analysis. Therefore, the proposed regulation adopts an 85% fault current limit. We request specific comments on this issue. Again, please provide technical detail in support of the comments.

Subsection 75.23(i) describes the types of generator facilities that may be considered under a Level 3 review. This class permits applications not approved under Levels 2 and 4, to be submitted as new interconnection requests for consideration under Level 3 review. The generation facilities are described as facilities with a nameplate capacity of less than 2 MW that are not certified and are non-inverter based.

The EDC has 10 business days to complete its initial review of a Level 3 request, and if necessary, shall advise the applicant in writing of any additional information needed to satisfy the review. If the EDC requests additional information from the applicant, 10 business days shall be allowed for response. The request shall be deemed complete when the requested information is received and reviewed by the EDC. The interconnection customer may request additional time to respond to the EDC's request for additional information.

The Level 3 review process includes a Scoping Meeting, Interconnection Feasibility Study, an Interconnection Impact Study, an Interconnection Facilities Study and a Witness Test. The EDC and applicant may agree to waive some of the steps in appropriate circumstances. A non-binding good faith estimated cost of the required studies is to be developed by the EDC and shall be the responsibility of the applicant.

If, as a result of the studies conducted, the EDC determines that the application should be granted, a Standard Small Generator Interconnection Agreement shall be provided to the applicant from the EDC. Upon receipt of the agreement, the applicant shall have 30 days, or another mutually agreeable timeframe, to sign and return the agreement to the EDC. Conversely, if upon the result of the studies conducted, the EDC determines that the interconnection request should be denied, the EDC shall provide a written explanation to the applicant.

A small generator facility that does not qualify for a Level 1 or Level 2 review may request to be evaluated under Level 4 procedures. Evaluation under Level 4 may also pertain to interconnection requests where there is no desire for export capability to the EDC's distribution system. A Level 4 review may also be used for requests for interconnection on the load side of an area network for facilities with a nameplate capacity up to 10 kW, utilizing certified inverter-based equipment, with customer-

generator installed reverse power relays and where the aggregated other generation on the area network does not exceed 5% of that network's maximum load.

The SGC suggested eliminating the Level 4 review and addressing those applications under Level 2 reviews for non-exporting generators. The EAPA asserted in its comments that absent a 50 kW limitation, as incorporated into the FERC Order 2006 standards in addition to the 5% limitation, a portion of the system could fall out of balance and cause failures in network protectors, especially under light load conditions. The EAPA also commented that Level 4 reviews should be permissive rather than mandatory as provided in the Staff proposal. The EAPA commented that the permissive use of a Level 4 review was agreed to by the majority of the MADRI working group to allow the EDC the flexibility to permit an expedited interconnection review for an area network while preserving its ability to perform more detailed reviews when necessary. The EAPA believes the proposed regulations are inconsistent with EDCs' current practices in the design of area networks to meet reliability standards. The EAPA stated that such an approach would negatively impact the ability of EDCs to meet the Commission's reliability benchmarks and should, therefore, result in revision of the benchmarks.

We request additional comments on the EAPA issues presented above to clarify the technical aspects of incorporating the 50kW limitation as well as permissive versus mandatory use of Level 4 reviews in specific instances. As noted before, specific technical support for a stated position is crucial to the Commission's determination in these areas.

D. Dispute Resolution

In this section, we outline the process the parties will use to resolve any disputes arising from the interconnection process. The proposed regulations direct aggrieved parties to the Commission's complaint procedures, but emphasize that informal alternative dispute resolution is preferred for the sake of expediency. The regulations propose that disputes related to the technical details of interconnection be referred to a Commission designated technical master. Any costs associated with dispute resolution will ultimately be determined by the Commission.

E. Insurance and Indemnification

The proposed regulations do not address indemnification or liability insurance. Commission Staff suggests that the appropriate vehicle for indemnification, and insurance requirements, if any, would be the interconnection agreement form. Some participants have suggested following the MADRI model with regard to insurance. MADRI's standard interconnection agreement does not require customer generators to provide general liability insurance, but does recommend that every customer generator protect itself with insurance due to the risk of incurring damages. It should be noted that proposed Section 75.13(k) in the proposed net metering regulations provides that insurance may not be required by an EDC. We invite comments on the issue of requiring customer generators to provide general liability insurance as a prerequisite for interconnection. Comments on this issue should discuss whether the issue of insurance and indemnification is different, depending on the nature of the interconnection equipment involved.

F. Forms and Fees

At several points in the proposed regulations, reference is made to the use of forms, agreements and fees as approved by the Commission. As we move further into the rulemaking process, the Commission will initiate a proceeding to establish uniform form agreements and fees for interconnection and net metering purposes. That process is expected to take the form of one or more tentative orders, followed by comments and a final order resulting in uniform forms and fees. The proposed regulations do require that standard forms be posted on the EDC websites.

CONCLUSION

The Commission welcomes the filing of comments by all interested parties on all aspects of these regulations. As we have noted above, the Commission is particularly interested in comments regarding the following issues: definition of "Affected System" and its impact on the applicable review level; the extension of timelines in emergency circumstances; whether Level 2 reviews should be restricted to inverter based equipment; whether review of an increase in capacity should be limited to the incremental addition or involve the total rated capacity of the generation equipment for which interconnection is sought; who bears the cost of a single point of interconnection for several customer-generators when recommended by the EDC; the external disconnect switch/lock box option; elimination of a set kilowatt limitation for spot networks in favor of a percentage limit only; the timelines for application review by the EDCs; the stated 85% limitation for fault currents; elimination of the 50 kW limitation for area network applications in favor of a percentage only cap; the mandated use of Level 4 reviews in certain circumstances; and, the issue of insurance requirements for customer-generators. Please bear in mind that specific, technical information has been requested to support positions taken on most of these issues.

To the extent that a participant believes any section of these proposed regulations needs modification, alternative language should be proposed together with the rationale for the modification. This is particularly important in the area of definitions. A comment period of 60 days has been provided.

Accordingly, under section 501 of the Public Utility Code, 66 Pa. C.S. §§ 501; section 5 of the Alternative Energy Portfolio Supply Act of 2004, 73 P.S. § 1648.5; sections 201 and 202 of the Act of July 31, 1968, P.L. 769 No. 240, 45 P.S. §§ 1201-1202, and the regulations promulgated thereunder at 1 Pa. Code §§ 7.1, 7.2, and 7.5; section 204(b) of the Commonwealth Attorneys Act, 71 P.S. 732.204(b); section 745.5 of the Regulatory Review Act, 71 P.S. § 745.5; and section 612 of the Administrative Code of 1929, 71 P.S. § 232, and the regulations promulgated thereunder at 4 Pa. Code §§ 7.231-7.234, we are considering adopting the proposed regulations set forth in Annex A, attached hereto; **THEREFORE**,

IT IS ORDERED:

1. That the Proposed Rulemaking at L- will consider the regulations set forth in Annex A.
2. That the Secretary shall submit this Order and Annex A to the Office of Attorney General for review as to form and legality and to the Governor's Budget Office for review of fiscal impact.
3. That the Secretary shall submit this Order and Annex A for review and comments to the Independent Regulatory Review Commission and the Legislative Standing Committees.
4. That the Secretary shall certify this Order and Annex A and deposit them with the Legislative Reference Bureau to be published in the *Pennsylvania Bulletin*.

5. That an original and 15 copies of any written comments referencing the docket number of the proposed regulations be submitted within 60 days of publication in the Pennsylvania Bulletin to the Pennsylvania Public Utility Commission, Attn.: Secretary, P.O. Box 3265, Harrisburg, PA 17105-3265.

6. That a copy of this Order and Annex A shall be served on the Department of Environmental Protection, all jurisdictional electric distribution companies, all licensed electric generation suppliers, the Office of Trial Staff, the Office of Consumer Advocate, the Office of Small Business Advocate, and all other Participants in the Alternative Energy Portfolio Supply Working Group at M-00051865.

7. That the contact persons for this Proposed Rulemaking are Greg Shawley, Bureau of Conservation, Economics and Energy Planning, 717-787-5369 (technical), and H. Kirk House, Office of Special Assistants, 717-772-8495 (legal).

BY THE COMMISSION,

James J. McNulty,
Secretary

(SEAL)

ORDER ADOPTED: November 10, 2005

ORDER ENTERED: November 16, 2005

ANNEX A
TITLE 52. PUBLIC UTILITIES
PART I. PUBLIC UTILITY COMMISSION
Subpart C. FIXED SERVICE UTILITIES
CHAPTER 75: THE ALTERNATIVE ENERGY PORFTOLIO STANDARDS ACT OF 2004

Subchapter C: INTERCONNECTION STANDARDS

§ 75.21. Scope.

This subchapter sets forth the interconnection standards that apply to EDCs which have customer-generators intending to pursue net metering opportunities in accordance with the Alternative Energy Portfolio Standards Act of 2004 ("AEPS"), 73 P.S. §§ 1648.1 - 1648.8.

§ 75.22. Definitions.

The following words and terms, when used in this subchapter, have the following meanings unless the context clearly indicates otherwise:

Adverse system impact – A negative effect, due to technical or operational limits on conductors or equipment being exceeded, that compromises the safety and reliability of the electric distribution system.

Applicant – A person who has submitted an interconnection request to interconnect a small generator facility to an EDC's electric distribution system, also referred to as the *Interconnection customer*.

Area network – A type of electric distribution system served by multiple transformers interconnected in an electrical network circuit, which is generally used in large metropolitan areas that are densely populated. This term shall have the same meaning as

the term “distribution secondary grid network” as stated in IEEE Standard 1547 Section 4.1.4 (published July 2003), as amended and supplemented.

Certificate of completion – A certificate in a form approved by the Commission containing information about the interconnection equipment to be used, its installation and local inspections. Completion of local inspections may be designated on inspection forms used by local inspecting authorities.

Certified – A designation that the interconnection equipment to be used by a customer-generator complies with the following standards, as applicable:

(a) IEEE Standard 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, as amended and supplemented.
(b) UL Standard 1741, “Inverters, Converters and Controllers for use in Independent Power Systems” (January 2001), as amended and supplemented.

Distribution upgrade – A required addition or modification to the EDC’s electric distribution system at or beyond the point of interconnection. *Distribution upgrades* do not include interconnection facilities.

Electric nameplate capacity – The net maximum or net instantaneous peak electric output capability measured in volt-amps of a small generator facility as designated by the manufacturer.

Electric distribution system – The facilities and equipment used to transmit electricity to ultimate usage points such as homes and industries from interchanges with higher voltage transmission networks that transport bulk power over longer distances. The voltage levels at which electric distribution systems operate differ among areas but generally carry less than 69 kilovolts of electricity. Electric distribution system shall have the same meaning as the term Area EPS, as defined in 3.1.6.1 of IEEE Standard 1547.

Fault current – The electrical current that flows through a circuit during an electrical fault condition. A fault condition occurs when one or more electrical conductors contact ground or each other. Types of faults include phase to ground, double-phase to ground, three-phase to ground, phase-to-phase, and three-phase. Often, a *Fault current* is several times larger in magnitude than the current that normally flows through a circuit.

IEEE standard 1547 – The most current official published version of the Institute of Electrical and Electronics Engineers, Inc. (IEEE) Standard 1547 (2003) "Standard for Interconnecting Distributed Resources with Electric Power Systems" at the time the interconnection request is submitted.

IEEE standard 1547.1 – The most current official published version of IEEE Standard 1547.1 (2005) "Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems" at the time the interconnection request is submitted.

Interconnection agreement – An agreement between an interconnection customer and an EDC, which governs the connection of the small generator facility to the electric distribution system, as well as the ongoing operation of the small generator facility after it is connected to the system, consistent with the requirements of this subchapter.

Interconnection customer – An entity, including an EDC, that proposes to interconnect a small generator facility to an electric distribution system.

Interconnection equipment – A group of components or integrated system connecting an electric generator with an electric distribution system that includes all interface equipment including switchgear, protective devices, inverters, or other interface devices.

Interconnection equipment may be installed as part of an integrated equipment package that includes a generator or other electric source.

Interconnection facilities – Facilities and equipment required by the EDC to interconnect the small generator facility and the interconnection customer's interconnection equipment. Collectively, interconnection facilities include all facilities and equipment between the small generator facility and the point of common coupling, including any modification, additions or distribution upgrades that are necessary to physically and electrically interconnect the small generator facility to the EDC's electric distribution system. Interconnection facilities are sole use facilities and do not include distribution upgrades.

Interconnection facilities study – A study conducted by the EDC or a third party consultant for the interconnection customer to determine a list of facilities (including EDC's interconnection facilities and required distribution upgrades to the electric distribution system as identified in the interconnection system impact study), the cost of those facilities, and the time required to interconnect the small generator facility with the EDC's electric distribution system.

Interconnection facilities study agreement – An agreement in a form approved by the Commission which details the terms and conditions under which an EDC will conduct an interconnection facilities study.

Interconnection feasibility study – A preliminary evaluation of the system impact and cost of interconnecting the small generator facility to the EDC's electric distribution system.

Interconnection feasibility study agreement – An agreement in a form approved by the Commission which details the terms and conditions under which an EDC will conduct an interconnection feasibility study.

Interconnection request – An interconnection customer's request, in a form approved by the Commission, requesting the interconnection of a new small generator facility, or to increase the capacity or operating characteristics of an existing small generator facility that is interconnected with the EDC's electric distribution system.

Interconnection study – Any of the following studies: the Interconnection Feasibility Study, the Interconnection System Impact Study, and the Interconnection Facilities Study.

Interconnection system impact study – An engineering study that evaluates the impact of the proposed interconnection on the safety and reliability of an EDC's electric distribution system. The study shall identify and detail the system impacts that would result if the small generator facility were interconnected without project modifications or system modifications, focusing on the adverse system impacts identified in the interconnection feasibility study, or to study potential impacts.

Interconnection system impact study agreement – An agreement in a form approved by the Commission which details the terms and conditions under which an EDC will conduct an interconnection system impact study.

Line section – That portion of an EDC's distribution system connected to an interconnection customer, bounded by automatic sectionalizing devices or the end of the distribution line.

Minor equipment modification – Changes to the proposed small generator facility that do not have a material impact on safety or reliability of the electric distribution system.

Nationally recognized testing laboratory – NRTL – A qualified private organization that meets the requirements of the Occupational Safety and Health Administration's (OSHA) regulations. NRTLs perform independent safety testing and product certification. Each NRTL must meet the requirements as set forth by OSHA in the NRTL program.

Parallel operation – parallel – The state of operation which occurs when a small generator facility is connected electrically to the electric distribution system and the potential exists for electricity to flow from the small generator facility to the electric distribution system.

Point of common coupling – The point where the customer's interconnection equipment connects to the electric distribution system at which harmonic limits or other operational characteristics (IEEE Standard 1547 requirements) are applied.

Point of interconnection – The point where the interconnection equipment connects to the EDC's electric distribution system.

Queue position -- The order of a valid interconnection request, relative to all other pending valid interconnection requests, that is established based upon the date and time of receipt of the valid interconnection request by the EDC. An interconnection request may not be deemed invalid by virtue of its being finally evaluated under different procedures than those under which it was originally considered. For example, an interconnection request originally submitted as a Level 1 interconnection request but eventually evaluated under Level 2 procedures is still a valid interconnection request and

is to be assigned a queue position based on the date of its original submission as a Level 1 interconnection request.

Scoping meeting – A meeting between representatives of the interconnection customer and EDC conducted for the purpose of discussing alternative interconnection options, exchanging information including any electric distribution system data and earlier study evaluations that would be reasonably expected to impact interconnection options, analyzing information, and determining the potential feasible points of interconnection.

Small generator facility – The equipment used by an interconnection customer to generate, or store electricity that operates in parallel with the electric distribution system. A small generator facility typically includes an electric generator, prime mover, and the interconnection equipment required to safely interconnect with the electric distribution system.

Spot network – This term shall have the same meaning as the term “Spot Network” under IEEE Standard 1547 Section 4.1.4, (published July 2003), as amended and supplemented. As of August, 2005, IEEE Standard 1547 defined "Spot Network" as "a type of electric distribution system that uses two or more inter-tied transformers to supply an electrical network circuit." A spot network is generally used to supply power to a single customer or a small group of customers.

Standard small generator interconnection agreement (SGIA) – A form of interconnection agreement approved by the Commission which is applicable to a Level 2, Level 3 or Level 4 interconnection request pertaining to a small generating facility.

UL Standard 1741– Means Underwriters Laboratories’ standard titled “Inverters Converters, and Controllers for Use in Independent Power Systems”.

Witness test -- The EDC's interconnection installation evaluation required by IEEE Standard 1547 Section 5.3 and the EDC's witnessing of the commissioning test required by IEEE Standard 1547 Section 5.4. For interconnection equipment that has not been certified, the witness test shall also include the witnessing by the EDC of the on-site design tests as required by IEEE Standard 1547 Section 5.1 and witnessing by the EDC of production tests required by IEEE Standard 1547 Section 5.2. All tests witnessed by the EDC are to be performed in accordance with IEEE Standard 1547.1

§ 75.23 General interconnection provisions.

(a) *Applicability.* The interconnection procedures shall apply to customer-generators with small generator facilities that satisfy the following criteria:

(1) The electric nameplate capacity of the small generator facility is equal to or less than 2 MW.

(2) The small generator facility is not subject to the interconnection requirements of an RTO.

(3) The small generator facility is designed to operate in parallel with the electric distribution system.

(b) *Interconnection requests*. Interconnection customers seeking to interconnect a small generator facility must submit an interconnection request to the EDC that owns the electric distribution system to which interconnection is sought. EDCs shall establish processes for accepting interconnection requests electronically.

(c) *Fees and Forms*. The Commission will determine the appropriate interconnection fees for Levels 1, 2, 3, and 4. In circumstances where standard forms are used for the interconnection process, examples of those forms shall be posted on the EDCs' websites.

(d) *Review procedures*. An EDC shall review interconnection requests using one or more of the following four review procedures:

(1) An EDC shall use Level 1 procedures for evaluation of all interconnection requests to connect inverter-based small generation facilities when:

(i) The small generator facility has an electric nameplate capacity of 10 kW or less.

(ii) The Customer Interconnection Equipment proposed for the Small Generator Facility is Certified.

(2) An EDC shall use Level 2 procedures for evaluating interconnection requests to connect Small Generation Facilities when:

(i) The small generator facility uses an inverter for interconnection.

(ii) The Electric Nameplate Capacity rating is 2 MW or less.

(iii) The customer interconnection equipment proposed for the small generator facility is certified.

(iv) The proposed interconnection is to a radial distribution circuit, or a spot network limited to serving one customer.

(v) The small generator facility was reviewed under Level 1 review procedures but not approved.

(3) An EDC shall use Level 3 review procedures for evaluating interconnection requests to connect small generation facilities with an electric nameplate capacity of 2 MW or less which do not qualify under Level 1 or Level 2 interconnection review procedures or which have been reviewed under Level 1 or Level 2 review procedures, but have not been approved for interconnection.

(4) Interconnection customers that do not qualify for Level 1or Level 2 review and do not export power beyond the point of common coupling may request to be evaluated under Level 4 review procedures which provide for a potentially expedited review process.

(e) *Technical standards*. The technical standards to be used in evaluating all interconnection requests under Level 1, Level 2, Level 3 and Level 4 reviews, unless otherwise provided for in these procedures, are IEEE 1547 and U.L. 1741, as they may be amended and modified.

(f) *Additional general requirements*. Additional general requirements include:

(1) When an interconnection request is for a small generator facility that includes multiple energy production devices at a site for which the interconnection customer seeks a single point of interconnection, the interconnection request shall be evaluated on the basis of the aggregate electric nameplate capacity of multiple devices.

(2) When an interconnection request is for an increase in capacity for an existing small generator facility, the interconnection request shall be evaluated on the basis of the new total electric nameplate capacity of the small generator facility.

(3) An EDC shall maintain records of:

(i) The total interconnection requests received.

(ii) The times required to complete interconnection request approvals and disapprovals.

(iii) The number of interconnection requests denied or moved to another review level.

(iv) The justifications for the actions taken on the interconnection requests.

(v) The number of requests that were not processed within established timelines.

(4) An EDC shall provide a report to the Commission containing the information required in § 75.23(f)(3) within 30 days of the close of each annualized period. The EDC shall keep the records on file for a minimum of 3 years.

(5) An EDC shall designate a contact person from whom information on the interconnection request and the EDC's electric distribution system can be obtained through informal requests regarding a proposed project. The information shall include studies and other materials useful to an understanding of the feasibility of interconnecting a small generator facility at a particular point on the EDC's electric distribution system, except to the extent providing the materials would violate security requirements or confidentiality agreements, or be contrary to law or state or federal regulations. In appropriate circumstances, the EDC may require confidentiality prior to release of such information.

(6) When an interconnection request is deemed complete, a modification other than a minor equipment modification to the proposed small generator facility or interconnection equipment, or minor equipment modification that would not affect the application of the screens in Levels 1, 2 or 4 that is not agreed to in writing by the EDC, shall require submission of a new interconnection request.

(7) When an interconnection customer is not currently a customer of the EDC, upon request from the EDC, the interconnection customer shall provide proof of

site control evidenced by a property tax bill, deed, lease agreement or other legally binding contract.

(8) An EDC may propose to interconnect more than one small generator facility at a single point of interconnection in order to minimize costs to the customer generator, and may not unreasonably refuse a request to do so. An interconnection customer may elect to pay the entire cost of separate interconnection facilities.

(9) Small generator facilities shall be capable of being isolated from the EDC by means of a lockable, visible-break isolation device accessible by the EDC. The isolation device shall be installed, owned, and maintained by the owner of the small generation facility and located between the small generation facility and the point of interconnection. A draw-out type circuit breaker with a provision for padlocking at the draw-out position can be considered an isolation device for purposes of this requirement.

(10) An interconnection customer may elect to provide the EDC access to an isolation device that is contained in a building or area that may be unoccupied and locked or not otherwise readily accessible to the EDC, by providing a key in a lockbox installed by the EDC that shall provide ready access to the isolation device. The interconnection customer shall permit the EDC to install the lockbox in a location that is readily accessible by the EDC and the interconnection customer shall permit the EDC to affix a placard in a location of its choosing that provides clear instructions to EDC operating personnel on access to the isolation device.

(g) *Level 1 interconnection review.*

(1) An EDC shall use the Level 1 interconnection review procedure for an interconnection request that meets the criteria set forth in § 75.23(d)(1). An EDC shall not impose additional requirements for Level 1 reviews not specifically authorized under this Section.

(2) The Level 1 Screening Criteria shall consist of:

(i) For interconnection of a proposed small generator facility to a radial distribution circuit, the aggregated generation on the circuit, including the proposed small generator facility, may not exceed 15% of the line section annual peak load as most recently measured at the sub station.

(ii) For interconnection of a proposed small generator facility to the load side of spot network protectors, the proposed small generator facility shall utilize an inverter-based equipment package. The customer interconnection equipment proposed for the small generator facility must be certified, and when aggregated with other generation, may not exceed 5% of the spot network's maximum load.

(iii) When a proposed small generator facility is to be interconnected on a single-phase shared secondary, the aggregate generation capacity on the shared secondary, including the proposed small generator facility, may not exceed 20 kW.

(iv) When a proposed small generator facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition may 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.

(v) Construction of facilities by the EDC on its own system is not required to accommodate the small generator facility.

(4) The Level 1 interconnection review procedure shall consist of:

(i) An EDC shall, within 10 business days after receipt of the interconnection request, inform the applicant that the interconnection request is complete or incomplete and what materials are missing.

(ii) The EDC shall, within 15 business days after the end of the 10 business days noted in (i), verify that the small generator facility equipment can be interconnected safely and reliably using Level 1 screens.

(A) When an EDC does not have a record of receipt of the interconnection request, and the applicant can demonstrate that the original interconnection request was delivered, the EDC shall expedite its review to complete the evaluation of the interconnection request within 15 days of the applicant's re-submittal.

(iii) Upon notice, within 10 Business Days after receipt of the certificate of completion, an EDC may conduct a witness test at a mutually convenient time, which must be passed. If the EDC does not conduct the witness test within 10 Business Days or within the time otherwise mutually agreed to by the parties, the witness test is deemed waived.

(iv) Unless an EDC determines and demonstrates that a small generator facility cannot be interconnected safely and reliably, the EDC shall sign the interconnection request form subject to the following conditions:

(A) The small generator facility has been approved by local or municipal electric code officials with jurisdiction over the interconnection.

(B) A certificate of completion has been returned to the EDC.

(C) The witness test has been successfully completed or waived.

(v) When a small generator facility is not approved under a Level 1 review, the interconnection customer may submit a new interconnection request for consideration under Level 2, Level 3 or Level 4 procedures specified in this Chapter without sacrificing the applicant's original queue position.

(h) *Level 2 Interconnection Review*.

(1) An EDC shall use the Level 2 interconnection review procedure for an interconnection request that meets the criteria set forth in § 75.23(d)(2). An EDC shall not impose additional requirements for Level 2 reviews not specifically authorized under this Section.

(2) The Level 2 Screening Criteria shall consist of:

(i) For interconnection of a proposed small generator facility to a radial distribution circuit, the aggregated generation on the circuit, including the proposed small generator facility, may not exceed 15% of the line section annual peak load as most recently measured at the sub station.

(ii) For interconnection of a proposed small generator facility to the load side of spot network protectors, the proposed small generator facility must utilize an inverter-based equipment package. The customer interconnection equipment proposed for the small generator facility must be certified and, when aggregated with other generation, may not exceed 5% of a spot network's maximum load.

(iii) The proposed small generator facility, in aggregation with other generation on the distribution circuit, may not contribute more than 10 % to

the distribution circuit's maximum fault current at the point on the primary voltage distribution line nearest the point of common coupling.

(iv) The proposed small generator facility, in aggregate with other generation on the distribution circuit, may not cause any distribution protective devices and equipment (including substation breakers, fuse cutouts, and line reclosers), or other customer equipment on the electric distribution system to be exposed to fault currents exceeding 85% of the short circuit interrupting capability. The interconnection request may not request interconnection on a circuit that already exceeds 85% of the short circuit interrupting capability.

(v) The proposed small generator facility's point of interconnection may not be on a transmission line.

(vi) When a customer-generator facility is to be connected to 3 phase, 3 wire primary EDC distribution lines, a 3 phase or single-phase generator shall be connected phase-to-phase.

(v) When a customer-generator facility is to be connected to 3 phase, 4 wire primary EDC distribution lines, a 3 phase or single phase generator will be connected line-to-neutral and will be effectively grounded.

(vi) This Level 2 screen includes a review of the type of electrical service provided to the interconnection customer, including line configuration and the transformer connection to limit the potential for creating over voltages on the EDC’s electric distribution system due to a loss of ground during the operating time of any anti-islanding function.

(vii) When the proposed small generator facility is to be interconnected on single-phase shared secondary line, the aggregate generation capacity on the shared secondary line, including the proposed small generator facility, will not exceed 20 kW.

(viii) When a proposed small generator facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, its addition may 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.

(ix) A small generator facility, in aggregate with other generation interconnected to the distribution side of a substation transformer feeding the circuit where the small generator facility proposes to interconnect, may not exceed 2 MW in an area where there are known or posted transient stability limitations to generating units located in the general electrical vicinity (for example, three or four distribution busses from the point of interconnection).

(x) Except as permitted by an additional review under the standard small generator interconnection agreement, no construction of facilities by an EDC on its own system will be required to accommodate the small generator facility.

(3) The Level 2 interconnection procedure shall consist of:

(i) An EDC shall, within 10 business days after receipt of the Interconnection Request, inform the applicant that the interconnection request is complete or incomplete and what materials are missing.

(ii) When an EDC determines additional information is required to complete an evaluation, the EDC shall request the information. The time necessary to complete the evaluation may be extended, but only to the extent of the delay required for receipt of the additional information. The EDC may not revert to the start of the review process or alter the interconnection customer's queue position.

(iii) When an interconnection request is complete, the EDC shall assign a queue position. The queue position of the interconnection request shall be

used to determine the potential adverse system impact of the small generator facility based on the relevant screening criteria. The EDC shall schedule a scoping meeting to notify the interconnection customer about other higher-queued interconnection customers on the same substation bus or spot network for which interconnection is sought.

(iv) Within 20 business days after the EDC notifies the interconnection customer it has received a completed interconnection request, the EDC shall:

(A) Evaluate the interconnection request using the Level 2 screening criteria.

(B) Review the interconnection customer's analysis, if provided by interconnection customer, using the same criteria.

(C) Provide the interconnection customer with the EDC's evaluation, including a comparison of the results of its own analyses with those of interconnection customer, if applicable.

(I) When an EDC does not have a record of receipt of the interconnection request and the applicant can demonstrate that the original interconnection request was delivered, the EDC shall expedite their review to complete the evaluation of the interconnection request within 15 days of the applicant's re-submittal.

(v) Upon notice within 10 business days after receipt of the certificate of completion, the EDC may conduct a witness test at a mutually convenient time. If the EDC does not conduct the witness test within 10 business days or within the time otherwise mutually agreed to by the parties, the witness test is deemed waived.

(4) When an EDC determines that the interconnection request passes the Level 2 screening criteria, or fails one or more of the Level 2 screening criteria but determines that the small generator facility can be interconnected safely and reliably, it shall provide the interconnection customer a standard small generator interconnection agreement within 5 business days after such determination.

(5) Additional review may be appropriate when a small generator facility has failed to meet one or more of the Level 2 screens. An EDC shall offer to perform additional review to determine whether minor modifications to the electric distribution system would enable the interconnection to be made consistent with safety, reliability and power quality criteria. The EDC shall provide the applicant with a non-binding, good faith estimate of the costs of additional review and minor modifications. The EDC shall undertake the additional review or modifications only after the applicant consents to pay for the review and modifications.

(6) An interconnection customer shall have 30 business days or another mutually agreeable timeframe after receipt of the standard small generator interconnection agreement to sign and return the agreement. When an interconnection customer does not sign the agreement within 30 business days, the interconnection request will be deemed withdrawn unless the interconnection customer requests to have the deadline extended. The request for extension may not be unreasonably denied by the EDC. When construction is required, the interconnection of the small generator facility will proceed according to any milestones agreed to by the parties in the standard small generator interconnection agreement. The interconnection agreement may not become final until:

(i) The milestones agreed to in the standard small generator interconnection agreement are satisfied.

(ii) The small generator facility is approved by electric code officials with jurisdiction over the interconnection.

(iii) The interconnection customer provides a certificate of completion to the EDC.

(iv) There is a successful completion of the witness test, unless waived.

(7) If the small generator facility is not approved under a Level 2 review, the interconnection customer may submit a new interconnection request for consideration under a Level 3 or Level 4 interconnection review; however, the queue position assigned to the Level 2 interconnection request shall be retained.

(i) *Level 3 Interconnection Review*.

(1) Each EDC shall adopt the Level 3 interconnection review procedure set forth in this Chapter. An EDC shall use the Level 3 review procedure to evaluate interconnection requests that meet the criteria below and for interconnection requests considered but not approved under a Level 2 or a Level 4 review if the interconnection customer submits a new interconnection request for consideration under Level 3:

(i) The small generator facility has an electric nameplate capacity that is less than 2MW.

(b) The small generator facility is less than 2 MW and not Certified.

(c) The small generator facility is less than 2 Mw and non-inverter based.

(2) The Level 3 interconnection review process shall consist of the following:

(i) By mutual agreement of the parties, the scoping meeting, interconnection feasibility study, interconnection impact study, or interconnection facilities studies under Level 3 procedures may be waived.

(ii) Within 10 business days from receipt of an interconnection request, the

EDC shall notify the interconnection customer whether the request is complete. When the interconnection request is not complete, the EDC shall provide the interconnection customer a written list detailing information that shall be provided to complete the interconnection request. The interconnection customer shall have 10 business days to provide appropriate data in order to complete the interconnection request or the interconnection request will be considered withdrawn. The parties may agree to extend the time for receipt of the additional information. The interconnection request shall be deemed complete when the required information has been provided by the interconnection customer, or the parties have agreed that the interconnection customer may provide additional information at a later time.

(iii) When an interconnection request is complete, the EDC shall assign a queue position. The queue position of an interconnection request shall be used to determine the cost responsibility necessary for the facilities to accommodate the interconnection. The EDC shall notify the interconnection customer at the scoping meeting about other higher-queued interconnection customers.

(iv) A scoping meeting will be held within 10 business days, or as agreed to by the parties, after the EDC has notified the interconnection customer that the interconnection request is deemed complete, or the interconnection customer has requested that its interconnection request proceed after failing the requirements of a Level 2 review or Level 4 review. The purpose of the meeting shall be to review the interconnection request, existing studies relevant to the interconnection request, and the results of the Level 1, Level 2 or Level 4 screening criteria.

(v) When the parties agree at a scoping meeting that an interconnection feasibility study shall be performed, the EDC shall provide to the

interconnection customer, no later than 5 business days after the scoping meeting, an interconnection feasibility study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

(vi) When the parties agree at a scoping meeting that an interconnection feasibility study is not required, the EDC shall provide to the interconnection customer, no later than 5 business days after the scoping meeting, an interconnection system impact study agreement, including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

(vii) When the parties agree at the scoping meeting that an interconnection feasibility study and system impact study are not required, the EDC shall provide to the interconnection customer, no later than 5 business days after the scoping meeting, an interconnection facilities study agreement including an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

(3) An interconnection feasibility study shall include the following analyses for the purpose of identifying a potential adverse system impact to the EDC's electric distribution system that would result from the interconnection:

(i) Initial identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection.

(ii) Initial identification of any thermal overload or voltage limit violations resulting from the interconnection.

(iii) Initial review of grounding requirements and system protection.

(iv) Description and non-binding estimated cost of facilities required to interconnect the small generator facility to the EDC's electric distribution system in a safe and reliable manner.

(v) When an interconnection customer requests that the interconnection feasibility study evaluate multiple potential points of interconnection, additional evaluations may be required. Additional evaluations shall be paid by the interconnection customer.

(vi) An interconnection system impact study is not required when the interconnection feasibility study concludes there is no adverse system impact, or when the study identifies an adverse system impact, but the EDC is able to identify a remedy without the need for an interconnection system impact study.

(vii) The parties shall use a form of interconnection feasibility study agreement approved by the Commission.

(4) An interconnection system impact study shall evaluate the impact of the proposed interconnection on the safety and reliability of the EDC's electric distribution system. The study shall identify and detail the system impacts that result when a small generator facility is interconnected without project or system modifications, focusing on the adverse system impacts identified in the interconnection feasibility study; or potential impacts including those identified in the scoping meeting. The study shall consider all generating facilities that, on the date the interconnection system impact study is commenced, are directly interconnected with the EDC’s system, have a pending higher queue position to interconnect to the system, or have a signed interconnection agreement.

(i) An interconnection system impact study shall:

(A) Consider the following criteria:

(I) A short circuit analysis.

(II) A stability analysis.

(III) Voltage drop and flicker studies.

(IV) Protection and set point coordination studies.

(V) Grounding reviews.

(B) State the underlying assumptions of the study.

(C) Show the results of the analyses.

(D) List any potential impediments to providing the requested interconnection service.

(E) Indicate required distribution upgrades and provide a non-binding good faith estimate of cost and time to construct the upgrades.

(ii) A distribution interconnection system impact study shall be performed when a potential distribution system adverse system impact is identified in the interconnection feasibility study. The EDC shall send the interconnection customer an interconnection system impact study agreement within 5 business days of transmittal of the interconnection feasibility study report. The agreement will include an outline of the scope of the study and a good faith estimate of the cost to perform the study. The study shall include:

(A) A load flow study.

(B) An analysis of equipment interrupting ratings.

(C) A protection coordination study.

(D) Voltage drop and flicker studies.

(E) Protection and set point coordination studies.

(F) Grounding reviews.

(G) Impact on system operation.

(iii) The parties shall use an interconnection impact study agreement or a distribution interconnection impact study as approved by the Commission.

(5) The interconnection facilities study shall be conducted as follows:

(i) Within 5 business days of completion of the interconnection system impact study, a report will be transmitted to the interconnection customer with an interconnection facilities study agreement, which shall include an outline of the scope of the study and a non-binding good faith estimate of the cost to perform the study.

(ii) The interconnection facilities study shall estimate the cost of the equipment, engineering, procurement and construction work, including overheads, needed to implement the conclusions of the interconnection feasibility study and the interconnection system impact study to interconnect the small generator facility. The interconnection facilities study shall identify:

(A) The electrical switching configuration of the equipment, including transformer, switchgear, meters, and other station equipment.

(B) The nature and estimated cost of the EDC's interconnection facilities and distribution upgrades necessary to accomplish the interconnection.

(C) An estimate of the time required to complete the construction and installation of such facilities.

(iii) The parties may agree to permit an interconnection customer to separately arrange for a third party to design and construct the required interconnection facilities. The EDC may review the design of the facilities under the interconnection facilities study agreement. When the parties agree to separately arrange for design and construction, and to comply with security and confidentiality requirements, the EDC shall make all relevant information and required specifications available to the interconnection customer to permit the interconnection customer to obtain an independent

design and cost estimate for the facilities, which must be built in accordance with the specifications.

(iv) Upon completion of the interconnection facilities study, and with the agreement of the interconnection customer to pay for the interconnection facilities and distribution upgrades identified in the interconnection facilities study, the EDC shall provide the interconnection customer with a standard small generator interconnection agreement within 5 business days.

(v) The parties shall use an interconnection facility study agreement approved by the Commission.

(6) When an EDC determines, as a result of the studies conducted under Level 3 review, that it is appropriate to interconnect the small generator facility, the EDC shall provide the interconnection customer with a standard small generator interconnection agreement. If the interconnection request is denied, the EDC shall provide a written explanation.

(7) Upon providing notice within 10 business days after receipt of the certificate of completion, the EDC may conduct a witness test at a mutually convenient time. If the EDC does not conduct the witness test within 10 business days, or within the time otherwise mutually agreed to by the parties, the witness test is deemed waived.

(8) An interconnection customer shall have 30 business days, or another mutually agreeable timeframe after receipt of the standard small generator interconnection agreement to sign and return the Agreement. When an interconnection customer does not sign the Agreement within 30 business days, the interconnection request will be deemed withdrawn unless the interconnection customer requests to have the deadline extended. The request for extension shall not be unreasonably denied

by the EDC. When construction is required, the interconnection of the small generator facility shall proceed according to milestones agreed to by the parties in the standard small generator interconnection agreement. The interconnection agreement shall not be final until:

(i) The milestones agreed to in the standard small generator interconnection agreement are satisfied.

(ii) The small generator facility is approved by electric code officials with jurisdiction over the interconnection.

(iii) The interconnection customer provides a certificate of completion to the EDC.

(iv) There is a successful completion of the witness test, unless waived.

(j) *Level 4 interconnection review.*

(1) Interconnection customers desiring to interconnect a small generator facility that does not qualify for a Level 1 or Level 2 review may request to be evaluated under Level 4 procedures.

(2) When an interconnection request is complete, the EDC shall assign a queue position. The queue position of each interconnection request will be used to determine the potential adverse system impact of the small generator facility based on the relevant screening criteria. The EDC shall schedule a scoping meeting to notify the interconnection customer about other higher-queued interconnection customers on the same substation bus or area network to which the interconnection customer seeks interconnection.

(3) When an interconnection customer submits an interconnection request to be interconnected to the load side of an area network, the EDC, notwithstanding any conflicting requirements in IEEE Standard 1547, shall use the procedures outlined below:

(i) When a small generator facility is less than or equal to 10 kW, the EDC shall use the review procedures for a Level 4 Review, when the small generator facility that meets all of the criteria below:

(A) The electric nameplate capacity of the small generator facility is equal to or less than 10 kW.

(B) The proposed small generator facility utilizes a certified inverter-based equipment package for interconnection.

(C) The customer-generator installs reverse power relays and/or other protection functions that prevent power flow beyond the point of interconnection.

(D) The aggregated other generation on the Area Network does not exceed 5% of an Area Network's maximum load.

(ii) Construction of facilities by the EDC on its own system is not required to accommodate the small generator facility.

(iii) The proposed small generator facility meeting the criteria under 3(i) shall be presumed appropriate for interconnecting to an Area network and shall be further evaluated by the EDC based on the following procedures:

(A) The EDC shall evaluate an interconnection request under Level 1 interconnection review procedures. The EDC shall have 20 business days to conduct an area network impact study to determine potential adverse impacts of interconnecting to the EDC’s area network.

(B) When an area network impact study identifies potential adverse system impacts, the EDC may determine that it is inappropriate for

the small generator facility to interconnect to the area network and the interconnection request shall be denied. The interconnection customer may elect to submit a new interconnection request for consideration under Level 3 procedures. The queue position assigned to the Level 4 interconnection request shall be retained.

(C) An EDC shall conduct the area network impact study at its own expense.

(iv) When an EDC denies an interconnection request, the EDC shall provide the interconnection customer with a copy of the area network impact study and a written justification for denying the interconnection request.

(v) When a small generator facility is greater than 10 kW and equal to or less than 50 kW, an EDC shall use the review procedures set forth for a Level 4 application to interconnect a small generator facility that meets all of the criteria below:

(A) The electric nameplate capacity of the small generator facility is greater than 10 kW and equal to or less than 50 kW.

(B) The proposed small generator facility utilizes a Certified inverter-based equipment package for interconnection.

(C) The customer-generator installs reverse power relays or other protection functions that prevent power flow beyond the point of interconnection.

(D) The aggregated other generation on the area network does not exceed 5% of an area network's maximum load.

(vi) Construction of facilities by the EDC on its own system is not required to accommodate the Small Generator Facility.

(vii) The proposed small generator facility meeting the criteria under (j)(3)(v) shall be presumed to be appropriate for interconnecting to an area

network and shall be further evaluated by an EDC using the following procedures:

(A) An EDC shall evaluate the interconnection request under Level 2 interconnection review procedures. The EDC shall have 25 days to conduct an area network impact study to determine any potential adverse impacts of interconnecting to the EDC's area network.

(B) When an area network impact study identifies potential adverse system impacts, an EDC may determine that it is inappropriate for the small generator facility to interconnect to the area network and the interconnection request shall be denied. The interconnection customer may elect to submit a new interconnection request for consideration under Level 3 procedures. The queue position assigned to the Level 4 interconnection request shall be retained.

(C) An EDC shall conduct the area network impact study at its own expense.

(D) When an EDC denies an interconnection request, the EDC shall provide the interconnection customer with a copy of its area network impact study and a written justification for denying the interconnection request.

(4) When interconnection to circuits that are not networked is requested, upon the mutual agreement of the EDC and the interconnection customer, the EDC may use the Level 4 review procedure for an interconnection request to interconnect a small generator facility that meets all of the following criteria:

(i) The small generator facility has an electric nameplate capacity of 2 MW or less.

(ii) The aggregated total of the electric nameplate capacity of all of the generators on the circuit, including the proposed small generator facility, is

2 MW or less.

(iii) The small generator facility uses reverse power relays or other protection functions that prevent power flow onto the utility grid.

(iv) The small generator facility will be interconnected with a radial distribution circuit.

(v) The small generator facility is not served by a shared transformer.

(vi) Construction of facilities by the EDC on its own system is not required to accommodate the small generator facility.

(5) When a small generator facility meets the criteria under (j)(4), an EDC shall interconnect under the Level 4 review if it meets the following requirements:

(i) A proposed small generator facility, in aggregation with other generation on the distribution circuit, may not contribute more than 10 % to the distribution circuit's maximum fault current at the point on the primary voltage distribution line nearest the point of common coupling.

(ii) The aggregate generation capacity on the distribution circuit to which the small generator facility shall interconnect, including its capacity, may not cause any distribution protective equipment, or customer equipment on the distribution system, to exceed 85% of the short-circuit interrupting capability of the equipment. A small generator facility may not be connected to a circuit that already exceeds 85% of the short circuit interrupting capability.

(iii) When there are known or posted transient stability limits to generating units located in the general electrical vicinity of the proposed point of common coupling, the proposed customer-generator shall be subject to a Level 3 review.

(iv) When a customer-generator facility is to be connected to 3-phase, 3 wire primary EDC distribution lines, a 3-phase or single-phase generator

shall be connected phase-to-phase. When a customer-generator facility is to be connected to 3-phase, 4 wire primary EDC distribution lines, a 3-phase or single phase generator shall be connected line-to-neutral and shall be effectively grounded. This review shall include examination of the type of electrical service provided to the interconnection customer, including line configuration and the transformer connection, to limit the potential for over voltages on the EDC's electric distribution system due to a loss of ground during the operating time of any anti-islanding function.

(6) When a small generator facility fails to meet the criteria under (j)(5), an EDC shall use the Level 3 interconnection procedures. The queue position assigned to the Level 4 interconnection request shall be retained.

(7) When a small generator facility satisfies the criteria under (j)(5), an EDC may, upon providing reasonable notice, within 10 business days after receipt of the Certificate of Completion, conduct a witness test at a mutually convenient time. If the EDC does not conduct the witness test within 10 business days or within the time otherwise mutually agreed to by the parties, the witness test is deemed waived.

(8) When a small generator facility satisfies the criteria for a Level 4 Interconnection, an EDC shall approve the interconnection request and provide a standard interconnection agreement to the interconnection customer for signature.

(9) The interconnection customer shall have 30 business days, or another mutually agreeable timeframe after receipt of the standard small generator interconnection agreement to sign and return the agreement. If the interconnection customer does not sign the agreement within 30 business days, the interconnection request shall

be deemed withdrawn unless the parties mutually agree to extend the time period for executing the agreement. After the agreement is signed by the parties, interconnection of the small generator facility will proceed according to milestones agreed to by the parties in the agreement. The agreement shall not be final until:

(i) The milestones agreed to in the standard small generator interconnection agreement are satisfied.

(ii) The small generator facility is approved by electric code officials with jurisdiction over the interconnection.

(iii) The interconnection customer provides a certificate of completion to the EDC.

(iv) There is a successful completion of the witness test, unless waived.

§ 75.24. Dispute Resolution.

(a) A party shall attempt to resolve all disputes regarding interconnection as provided in this Chapter promptly, equitably, and in a good faith manner.

(b) When a dispute arises, a party may seek immediate resolution through complaint procedures available through the Commission, or an alternative dispute resolution process approved by the Commission, by providing written notice to the Commission and the other party stating the issues in dispute. Dispute resolution will be conducted in an informal, expeditious manner to reach resolution with minimal costs and delay. When available, dispute resolution may be conducted by phone.

(c) When disputes relate to the technical application of these regulations, the Commission may designate a technical master to resolve the dispute. The Commission

may designate a Department of Energy national laboratory, PJM Interconnection L.L.C., or a college or university with distribution system engineering expertise as the technical master. When the FERC identifies a national technical dispute resolution team, the Commission may designate the team as its technical master. Upon Commission designation, the parties shall use the technical master to resolve disputes related to interconnection. Costs for dispute resolution conducted by the technical master shall be determined by the technical master subject to review by the Commission.

(d) Pursuit of dispute resolution may not affect an interconnection applicant with regard to consideration of an interconnection request or an interconnection applicant's position in the EDC's interconnection queue.