

Regulatory Analysis Form

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(1) Agency

Pennsylvania Public Utility Commission

(2) I.D. Number (Governor*s Office Use)

L-00050175/57-245

IRRC Number: 2524

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INDEPENDENT REGULATORY REVIEW COMMISSION

(3) Short Title

Final Rulemaking Re: Establishing 52 Pa. Code §§ 75.21-75.51 (Interconnection Standards)

(4) PA Code Cite

52 Pa. Code §§ 75.21-75.51

(5) Agency Contacts & Telephone Numbers

Primary Contact: H. Kirk House 2-8495

Secondary Contact: Greg Shawley 7-5369

(6) Type of Rulemaking (check one)

- Proposed Rulemaking
 Final Order Adopting Regulation
 Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached?

- No
 Yes: By the Attorney General
 Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

The regulation establishes the definitions and procedures through which a customer-generator, as defined in the Alternative Energy Portfolio Standards Act, can interconnect on site generation to a utility's distribution line.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

Sections 501 and 1501 of the Public Utility Code, 66 Pa. C.S. §§501 and 1501; Section 5 of the Alternative Energy Portfolio Standards Act of 2004, 73 P.S. § 1648.5; Sections 201 and 202 of the Act of July 31, 1968, P.L. 769 No. 240, as amended, 45 P.S. §§1201 and 1202, and the associated regulations at 1 Pa. Code §§7.1, 7.2, and 7.5; Section 204(b) of the Commonwealth Attorneys Act, Act of October 15, 1980, P.L. 950, as amended, 71 P.S. 732.204(b); Section 745.5 of the Regulatory Review Act, Act of June 25, 1982, P.L. 633, as amended, 71 P.S. §745.5; Section 612 of the Administrative Code of April 9, 1929, P.L. 177, as amended, 71 P.S. §232, and the associated regulations at 4 Pa. Code §§7.231-7.234.

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(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

Yes. Section 5 of the Alternative Energy Portfolio Standards Act of 2004, 73 P.S. § 1648.5. The rulemaking process must be initiated on or before November 30, 2005.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

The Alternative Energy Portfolio Standards Act of 2004 requires the Commission to promulgate regulations governing interconnection standards in the Commonwealth for customer-generators. The regulation establishes the procedures through which customer-generators will interconnect on site generation to utilities' distribution lines.

(12) State the public health, safety, environmental or general welfare risks associated with nonregulation.

Nonregulation is not an issue. The regulation is required by the Alternative Energy Portfolio Standards Act of 2004.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

Customer-generators and utilities will benefit from the proposed regulation by having clear standards and processes to follow in interconnecting customer-generators to utilities' distribution lines. The general public will benefit to the extent that a clear set of standards will encourage the use of environmentally friendly energy production. Quantification of benefits is not possible at this time.

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(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effects as completely as possible and approximate the number of people who will be adversely affected.)

No one will be adversely affected by the regulation.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

Regulated electric utilities and customer-generators will be required to comply with the regulation.

(16) Describe the communications with and input from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

In accordance with the Alternative Energy Portfolio Standards Act of 2004, the Commission established a stakeholder group to develop the regulations. That group consisted of Commission staff, Department of Environmental Protection staff, the Energy Association of Pennsylvania, electric utilities, the Office of Consumer Advocate, the Small Business Advocate, members of the Pennsylvania Farm Bureau, vendors of alternative energy systems such as solar, wind and bio-digester equipment and trade groups representing alternative energy production interests. Several meetings were held in the spring of 2005. General comments were solicited to outline issues. During the Summer of 2005, the Commission directed the stakeholder group to participate in the Mid-Atlantic Distributed Resource Initiative (MADRI) which was developing regional standards for small generator interconnection. In August of 2005, Commission staff used draft MADRI standards and provided an initial proposal to the stakeholder group. Specific comments to that proposal were requested. The Commission then issued a Notice of Proposed Rulemaking and sought comments. The final regulation is the culmination of the foregoing efforts.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

Cost studies have not been conducted. The proposed regulations provide for specific review procedures and engineering evaluations of electric generation equipment and the interconnection of that equipment to utilities' distribution lines. The cost of those evaluations will, in large part, depend upon the particular installation involved. It is also difficult to estimate the number of interconnection requests that will be processed in a given year pursuant to the regulation. Compared to the over-all rate base of the electric utilities in the Commonwealth, it is anticipated that the involved costs will be nominal. It is anticipated that the total cost to customer-generators will be a very small percentage (1% - 2%) of the over-all project cost for planning and installation of the generation facility.

Regulatory Analysis Form

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

Cost studies have not been conducted. It is anticipated that participation by local governments would primarily be as customer-generators and would be purely voluntary.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required.

Cost studies have not been conducted. The regulation may require additional Commission resources to monitor the interconnection process and conduct dispute resolution services that may arise from utility/customer-generator interactions. These potential costs cannot be estimated at this time.

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(20) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community						
Local Government						
State Government						
Total Savings						
COSTS:						
Regulated Community						
Local Government						
State Government						
Total Costs						
REVENUE LOSSES:						
Regulated Community						
Local Government						
State Government						
Total Revenue Losses						

(20a) Explain how the cost estimates listed above were derived.

NA

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(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY -3	FY -2	FY -1	Current FY

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

The Interconnection Standards regulation as required by the Alternative Energy Portfolio Standards Act of 2004 establishes a new program for the Commonwealth. No prior cost/benefit information is available.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

The regulation is required by legislation. Nonregulatory alternatives were not considered.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.

In the course of designing the regulation, the stakeholder group examined interconnection standards in several jurisdictions such as New Jersey and New York, as well as the MADRI standards. To the extent that existing practices were deemed "best practices", they were adopted. Any cost differences were not deemed significant.

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(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulation.

Currently, no federal standards apply to the level of interconnection governed by the regulation.

(25) How does this regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

The stakeholder group examined similar programs in other states, most significantly in New Jersey. The group also examined the draft proposal arising out of the MADRI process. The regulation was developed using a "best practices" approach. Accordingly, it is unlikely that Pennsylvania will be placed at a competitive disadvantage with other states.

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

The Commission has promulgated a companion regulation, also required by the Alternative Energy Portfolio Standards Act of 2004, on net metering at Commission Docket No. L-00050174. The Code citation is 52 Pa. Code §§ 75.1-75.15. The net metering regulation governs how energy use and production will be measured and compensated. The interconnection standards regulation governs how customer-generators will physically connect to electric distribution lines.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

No.

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(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

Electric utilities will be required to provide an annual report which details the total number of interconnection requests received; the number of requests denied or moved to another review level; and the number of requests that were not processed within the established timelines. No forms for such reports have been developed at this time.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

N/A

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The effective date will be the date the regulation is published in the Pennsylvania Bulletin. That date is dependent upon the regulatory review process. The Commission hopes to complete the process as quickly as possible.

(31) Provide the schedule for continual review of the regulation.

The regulation will undergo continual review on no less than an annual basis. It is expected that the reporting requirements will aid that review.

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INDEPENDENT REGULATORY
REVIEW COMMISSION

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Copy below is hereby approved as to form and
legality. Attorney General.

BY _____
(DEPUTY ATTORNEY GENERAL)

DATE OF APPROVAL _____

Check if applicable
Copy not approved. Objections attached

Copy below is hereby certified to be true and
correct copy of a document issued, prescribed or
promulgated by:

Pennsylvania Public Utility Commission
(AGENCY)

DOCUMENT/FISCAL NOTE NO. L-00050175/57-245

DATE OF ADOPTION August 17, 2006

BY James J. McNulty
James J. McNulty

TITLE (SECRETARY)

Copy below is hereby approved as to
form and legality. Executive or
independent Agencies.

BY Bohdan R. Pankiw
Bohdan R. Pankiw
Chief Counsel

8-17-06
DATE OF APPROVAL

Check if applicable. No Attorney General
approval or objection within 30 days after
submission.

L-00050175/57-245
Final Rulemaking
Interconnection Standards for Customer-generators Pursuant
To Section 5 of the Alternative Energy Portfolio
Standards Act
52 Pa. Code, Section 75

The Pennsylvania Public Utility Commission on August 17, 2006, adopted a final rulemaking order which promotes onsite generation by customer-generators using renewable resources and eliminates barriers which may have previously existed regarding interconnection. The contact persons are Greg Shawley, Bureau of Conservation, Economics and Energy Planning, 787-5369 and H. Kirk House, Office of Special Assistants, 772-8495.

EXECUTIVE SUMMARY

L-00050175/57-245

Final Rulemaking

Re: Regulation of Interconnection Standards for Electric Utilities

52 Pa. Code Sections 75.21-75.51

Pursuant to 73 P.S. § 1648.5, the Public Utility Commission is required to develop regulations governing interconnection standards within the Commonwealth through a stakeholder process. This rulemaking is the final regulation resulting from the stakeholder process. The regulation governs the process by which a customer-generator, as defined by the Alternative Energy Portfolio Standards Act, may interconnect on site generation equipment to an electric utility's distribution lines. The regulation sets forth specific levels of review and review criteria depending on the rated generation capacity of the generation equipment. The regulation also provides for a dispute resolution process to manage disputes which may arise during the interconnection process.

The contact persons are H. Kirk House, Office of Special Assistants (legal) 717-772-8495 and Greg Shawley, Conservation Economics and Energy Planning (technical) 717-787-5369.

**PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265**

Public Meeting held August 17, 2006

Commissioners Present:

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

Final 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

FINAL 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, this constitutes the Commission's Final Rulemaking which establishes regulations governing interconnection for customer-generators as set forth in the Act.

BACKGROUND

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 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 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 an 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, the Commission issued its Notice of Proposed Rulemaking on November 16, 2005 (November NOPR). The November NOPR 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.

Similar to the initial Staff proposal, the November NOPR sought comments on specific issues and invited comments on any other issues which interested persons wished to raise. The November NOPR was published in the *Pennsylvania Bulletin* on February 25, 2006 (36 Pa.B. 942). Comments were due to be filed on or before April 26, 2006.

Comments to the November NOPR were filed by: the Independent Regulatory Review Commission (IRRC); the DEP; the Department of Agriculture; the Pennsylvania Farm Bureau; the Pennsylvania Environmental Council; the OCA; the OSBA; the EAPA; PECO Energy Company (PECO); Citizens' Electric Company of Lewisburg, PA, and

Wellsboro Electric Company (collectively, “Citizens”); the Industrial Energy Consumers of Pennsylvania, Met-Ed Industrial Users Group, the Penelec Industrial Customer Alliance, the Philadelphia Area Industrial Users Group, the PP&L Industrial Customer Alliance and the West Penn Power Industrial Interveners (collectively, “IECPA”); Penn Future; Native Energy, LLC (Native Energy); and, Pennsylvania Small Generator Coalition (SGC).

DISCUSSION

The Commission has reviewed each of the comments filed in this proceeding. We will address those comments as we go through the regulations, *seriatim*.

A. § 75.21. 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.

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 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.

IECPA commented that it supported the revised scope language. However, IECPA wanted to clarify that nothing in this rulemaking would serve to modify or invalidate agreements governing interconnections for systems with nameplate capacity greater than 2 MW. We agree with IECPA that this rulemaking is not intended to alter transactions involving generation systems with nameplate capacities of greater than 2 MW.

B. § 75.22. Definitions

In its comments, the IRRC suggested that the Commission define five technical terms that are used in making pivotal determinations during the screening process for interconnection requests. The first term, “Radial Distribution Circuit,” appears four times in the proposed regulations in the following sections: § 75.34(iv), Review Procedures; § 75.37(b)(1), Level 1 Interconnection Review; § 75.38(b)(1), Level 2 Interconnection Review and § 75.40(d)(4), Level 4 Interconnection Review. In the proposed regulation a radial distribution circuit is presented as the segment of the EDC’s system to which a small generation facility will interconnect. This term is defined in IEEE Standard 1547 (2003) as a system in which independent feeders branch out radially from a common source of supply. From the standpoint of a utility system, the area described is between the generating source or intervening substations and the customer’s entrance equipment. A radial distribution system is the most common type of connection between a utility and load in which power flows in one direction, from the utility to the customer. (Presentation by Thomas Basso, IEEE Secretary, Standards Coordinating Committee 21, June 9, 2004).

We shall include this term and the following definition in the final regulation.

Radial Distribution Circuit - a system in which independent feeders branch out radially from a common source of supply. From the standpoint of a utility system, the area described is between the generating source or intervening substations and the customer's entrance equipment. A radial distribution system is the most common type of connection between a utility and load in which power flows in one direction, from the utility to the load.

The second term to be defined is "Draw-out Type Circuit Breaker," which appears at Section 75.36 of the proposed regulation, regarding additional general requirements. The National Electrical Safety Code (NESC) defines circuit breaker as a switching device capable of making, carrying and breaking currents under normal circuit conditions and also, making and carrying for a specified time and breaking currents under specified abnormal circuit conditions, such as those of a short circuit. A draw-out circuit breaker has two parts, the base, which is bolted and wired to the frame and the actual breaker, which slides into and electrically mates with the base. Thus, a draw-out circuit breaker can be physically removed from its enclosure thereby creating a visible break in the circuit.

Based upon the NESC language, we shall include the following definition in the final rulemaking.

Draw-out Type Circuit Breaker – a switching device capable of making, carrying and breaking currents under normal circuit conditions and also, making and carrying for a specified time and breaking currents under specified abnormal circuit conditions, such as those of a short circuit. A draw-out circuit breaker has two parts, the base, which is

bolted and wired to the frame and the actual breaker, which slides into and electrically mates with the base. A draw-out circuit breaker can be physically removed from its enclosure thereby creating a visible break in the circuit.

The third technical term which needs to be defined is “Secondary,” which is used at Sections 75.37(b)(3) and 75.38(b)(9) regarding Level 1 and Level 2 Interconnection Reviews. The specific language within these two sections of the regulation is as follows:

When the proposed small generator facility is to be interconnected on a single-phase shared secondary line, the aggregate generation capacity on the shared secondary line ...

The term “Secondary,” refers to a service line subsequent to the utility’s primary distribution line, and is also referred to as the customer’s service line. For clarity we shall incorporate the definition of “Secondary,” describing its intended meaning within the final rulemaking as follows.

Secondary line – a service line subsequent to the utility’s primary distribution line, and is also referred to as the customer’s service line.

The fourth technical term cited by the IRRC is “Center Tap Neutral,” which is used at Sections 75.37(b)(4) and 75.38(b)(10) regarding Level 1 and Level 2 Interconnection Reviews. The following is an explanation of how and why a center tap neutral approach is applied when installing electrical service.

A center tapped transformer has a tap in the middle of the secondary winding, usually used as a grounded neutral connection. This provides an option of using the full available voltage output or just half of it according to need. This type of transformer is

used to bring the distribution system voltage down from three-phase to a safer level to be used for household purposes.

We shall include the following definition in the regulation regarding a center tap neutral transformer.

Center tapped neutral transformer - a transformer with a tap in the middle of the secondary winding, usually used as a grounded neutral connection, intended to provide an option for the secondary side to use the full available voltage output or just half of it according to need.

The last term the IRRC requested the Commission to provide a definition for is “Anti-Islanding Function,” which is used in the regulation at Sections 75.38(b)(8) and 75.40(e)(4), regarding Level 2 and Level 4 Interconnection Reviews. As described in IEEE 1547, islanding is the situation during which the customer’s generator facility energizes a portion of the spot or area network (distribution system) through the point of common coupling for more than five seconds. To prevent this event, the customer’s interconnection system must detect the island and cease to energize the spot or area network within two seconds of the formation of an island. Islanding may also be described as occurring when a distributed generation source continues to provide electricity to a portion of the utility grid after the utility experiences a disruption in service. Since the utility no longer controls this part of the distribution system, islanding can pose problems for utility personnel safety, power quality, equipment damage and restoration of service. (National Renewable Energy Laboratory, Study and Development of Anti-Islanding Control for Grid-Connected Inverters, May 2004). Accordingly, the anti-islanding capability acts to automatically isolate the generating unit from the distribution circuit within a specified period of time when a potential islanding situation develops.

Anti-islanding capability is built into inverter based systems certified to IEEE 1574 standards and tested in accordance with UL 1741. Acknowledging the IRRC's request, we shall include the following definition of anti-islanding in our final regulation.

Anti-islanding -- the protective function which prevents electrical generating equipment from exporting electrical energy when connected to a de-energized electrical system.

The IRRC also noted that several definitions contain substantive provisions which cannot be enforced unless those provisions are placed in the body of the regulation. The IRRC pointed to the definitions for: "Certificate of completion," "Interconnection system impact study" and "Queue position." We will modify those definitions and ensure that substantive provisions are placed in the appropriate places in the regulations. In addition, the IRRC suggested adding a definition of "Equipment package" to this regulation. We have done so.

The IRRC also notes that at certain places in the Definitions section, we reference "the most current official published version" of technical references (IEEE standard 1547.1 and UL standard 1741) while in other places we reference the standards "as amended and supplemented." The IRRC suggests that we revise the definitions to provide for a consistent phrase regarding the updated versions of the technical standards. The EAPA also comments that the regulations should recognize that the technical standards are "living" documents that will be amended and supplemented over time. We will make the modification recommended by the IRRC which also addresses the EAPA's concerns.

Proposed “Affected System” Definition

The proposed regulations do not incorporate a definition of “Affected System.” The term refers to an Electric Distribution System, other than the Electric Distribution System owned or operated by the EDC to which the customer-generator is interconnected, that may be affected by the proposed interconnection.

Positions of the Parties

The EAPA argues that there will be situations where the installation of a customer-generator may have an impact on a neighboring EDC, particularly for Level 2 and 3 installations. Of particular concern to the EAPA are interconnections with other utility systems at the distribution level such as with Rural Electric Co-ops and Municipal Utilities. The EAPA, therefore, supports inclusion of a mechanism to deal with such situations both for purposes of system study and accounting/cost allocation. The IRRC agrees that any system which may be affected by the generator, including neighboring EDCs, should be party to the consideration of the impact of that generator on their systems.

The OCA and SGC, however, do not believe that the definition proposed by the EAPA is necessary. The OCA is not aware of substantial interconnections below the sub-transmission level where impacts identified by the EAPA can be reasonably expected to occur. In addition, the OCA notes that the Commission’s proposed regulations govern small generators of less than 2 MW. Larger units will be required to interconnect directly under PJM small generation interconnection rules. As a result, for those larger systems, regional impacts will be analyzed and generators will be required to comply with PJM rules.

Likewise, SGC believes that a definition for this term is functionally irrelevant under state jurisdiction in the presence of a functional Regional Transmission

Organization (RTO). SGC notes that in cases where a generator interconnection may affect another utility's system, it can only do so through the transmission grid. That type of request would be processed under PJM Interconnection rules for proper impact analysis on the transmission grid.

Disposition

The OCA and SGC have made valid arguments against the inclusion of a definition of "Affected System." The Commission therefore declines to incorporate that definition since it is highly unlikely that the impacts cited by EAPA are likely to occur with systems contemplated by this regulation. Larger units over 2 MW would be required to interconnect directly under PJM small generation interconnection rules. If an interconnection governed by this regulation does present a problem of this nature, that can be reviewed by the Commission on a case-by-case basis.

Designated Address

The EAPA proposes a specific definition for "designated address" in addition to providing that EDCs establish a designated address for receipt of interconnection applications and materials. The IRRC also comments that a designated address should be used to provide certainty for the delivery of interconnection materials to EDCs. We will decline to adopt a definition for designated address, but we will provide the requirement that each EDC provide information regarding its designated address in interconnection materials, its tariff and on its website.

Proposed “Electric nameplate capacity” Definition

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

Positions of the Parties

The EAPA comments that use of the word “net” is inappropriate in the definition. According to the EAPA, if “net” is contained in the definition, it is theoretically possible for a 100 MW generator with 99 MW of load to be reviewed under the Level 2 screening criteria. The EAPA comments that the effect of the generator on the EDC’s system needs to be based on the rating of the generator and not on the net output capability. The EAPA suggests deletion of the word “net” from the definition. The IRRC comments that the Commission should explain why net output is the correct measure.

Disposition

We will decline to adopt the EAPA suggestion. In doing so, we note that the EAPA’s “theoretical” example is not particularly useful in the analysis of this issue. Simply put, the screens and studies provided for in this regulation are designed to ensure that the net output capability of any particular generator facility will not adversely affect the distribution circuit to which interconnection is sought. Thus, the generating output which is of concern is that output net only of the generation plant use. It is that net output capability which will impact the distribution circuit. Systems which carry output potentials of sufficient size to warrant the EAPA’s concern are necessarily processed under higher level screens with greater scrutiny. This, in turn, will provide the certainty that the EAPA suggests is at the root of its concern. Conversely, adoption of the EAPA’s suggestion may force lower rated systems into more complex screens without any concomitant benefit to circuit reliability.

Proposed “Minor Equipment Modification” Definition

The proposed definition of Minor Equipment Modification provides that: “Changes to the proposed small generator facility that do not have a material impact on safety or reliability of the electric distribution system.” The purpose of the definition is to clarify that in those circumstances when a minor equipment modification is made, a new interconnection application will not be required. (*See, e.g.*, § 75.23(f)(6)).

Position of the Parties

The EAPA suggests adding the phrase “power quality” to the above definition (and to other portions of the regulation). The purpose of the EAPA suggestion is to ensure that “the maintenance of power quality be incorporated into several locations throughout the rulemaking.”

Disposition

We will decline to adopt the EAPA’s suggestion. The issue of power quality is managed by the regulation’s use of IEEE 1547 and UL Standard 1741 requirements as well as the more complex and advanced reviews required for generator facilities which are not readily certified under the less complex screens. Adoption of the EAPA’s suggestion here (and at other locations in the regulation) simply adds additional, unnecessary complexity.

C. General Issues

Initially, we note that the EAPA provided an extensive red-lined version of the proposed regulation. Most of the suggested modifications did not have accompanying comments or other justification for their implementation. Where the suggestions result in greater clarity without modifying substance or a participant's obligations, we have generally adopted them. In many cases, we have declined to modify the regulation without further comment. Where comments have been provided by the EAPA, we have addressed them. However, we emphasize that all of EAPA's suggestions have been carefully considered.

A brief description of the substantive provisions of the regulation is in order at this point. The regulation provides interconnection 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.

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.

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.

The IRRC's General Comments

Screening criteria vs. alternative energy source availability

The IRRC presented several general comments which are best addressed at this time. First, the IRRC expressed concern that some of the screening criteria could serve as barriers to the development of alternative energy. Accordingly, the IRRC suggested that the Commission explain how a necessary balance is stricken between the adopted screening criteria and allowing alternative energy sources to be reasonably available in the marketplace.

This regulation concerns itself with providing technical standards and processes by and through which customer-generators may interconnect to an EDC's distribution system. The alternative energy sources enabled by these interconnections will be a very small part of the over-all alternative energy development envisioned by the Act. In addition, it is anticipated that the technical expertise of the customer-generators covered by the regulation will vary widely. Accordingly, the screening criteria have been developed to ensure that the interconnection process is relatively quick and inexpensive, while still providing for reliability of the electric distribution system. To the extent that criteria serve to screen out a particular generator facility, the screens provide the ability

for customer-generators to make necessary modifications and eventually obtain interconnection.

There should be only two instances when a generator facility fails the screens regardless of efforts at modification. The first is when a particular distribution circuit has reached its maximum capacity and is physically incapable of receiving any additional generation. The second instance is when the generator facility simply cannot match the screens' technical requirements regardless of modification. In either case, reliability demands that the interconnection fail. It is anticipated that the number of these types of failures will be few and will not significantly decrease the amount of alternative energy which would normally be produced by the types of interconnected generation contemplated by this regulation.

Cost Recovery

The IRRC suggests that the Commission address cost recovery in the context of certain regulations which provide for EDC actions. We will address the issue of cost responsibility in the context of those specific regulations. However, cost recovery by an EDC is an issue that is not readily resolved in the context of this regulation. The Act provides for the recovery of certain specific and indirect costs relating to implementation of the Act at Section 3, 73 P.S. § 1648.3. Whether costs incurred in implementing this regulation are covered under that section, or whether they are allowable as an EDC expense for recovery through rates are issues to be decided in the context of the Commission's over-all implementation of the Act or, possibly, in an individual EDC's applicable rate case.

Insurance and Indemnification

In our November NOPR, we did not mandate indemnification or liability insurance requirements having determined that the appropriate vehicle for indemnification, and insurance requirements, if any, would be the interconnection agreement form. We invited comments on the issue of requiring customer-generators to provide general liability insurance as a prerequisite for interconnection and asked the Parties to discuss how such a requirement would apply to each customer-generator class.

Positions of the Parties

The IRRC queried how interconnections with alternative energy suppliers could be done without insurance protection but went on to state that because the Commission did not provide language regarding insurance requirements, any language added to the regulation would have to be done in another rulemaking. The IRRC pointed to the Subsections 75.37(a) and 75.38(a) of the proposed regulation which provide that an “EDC may not impose additional requirements . . . not specifically authorized under this subchapter.”

Citizens state that customer-generators should be required to provide general liability insurance because the malfunction of a parallel generating unit of any size might negatively affect the EDC’s distribution system and service to other customers. The EAPA supports an insurance requirement with policy limits commensurate with the industry norm for equipment of the size being utilized.

DEP, SGC, and the OCA support following the MADRI model which does not require customer-generators to provide general liability insurance; but, does provide a recommendation in the interconnection agreement that the customer-generator obtain

liability insurance to cover any potential risk. Native Energy, the Department of Agriculture, Pa Farm Bureau, and SGC state that many rural landowners and farmers do not have the capital necessary to invest in additional forms of insurance and that such a requirement would act as an obstacle to their investment in clean energy projects. Various Parties opposing an insurance regulation point to our neighboring states, New Jersey and New York, which do not permit the EDCs to require insurance of the customer-generators.

Disposition

We have received no comments that have provided even anecdotal information regarding instances where the lack of an insurance requirement for a customer-generator has negatively affected the EDC's system or other customers. We anticipate that most customer-generators will voluntarily obtain some form of liability protection. Additionally, we note that our net metering regulations do not require insurance. We will follow the MADRI model on this issue. We expect that the standard interconnection agreement will not require customer-generators to provide proof of general liability insurance; however, it will recommend that every customer-generator protect itself with insurance due to the risk of incurring damages. We believe that this approach will permit the customer-generator to determine the appropriate amount and type of insurance that best suits their facility without creating further barriers to those wishing to interconnect. If experience with implementation suggests otherwise, we will revisit this issue in another rulemaking.

Section 1648.5 of the Act; Consistency with rules in other states

The IRRC notes that the Act requires that the Commission adopt rules which are consistent with rules developed in other states located in Pennsylvania's region. The

IRRC comments that several interested parties have commented that the regulation differs from certain regulations in New Jersey in several respects, with the commenting party usually favoring the New Jersey rules. The IRRC requests that the Commission explain how the final form regulation is consistent with Section 1648.5 of the Act.

The requirement of the Act is that the Commission adopt regulations that are “consistent” with rules developed in neighboring states. The Act does not require that our processes be identical. In most instances, the regulation is very close if not identical to the processes established in New Jersey. Some examples include the lack of an insurance requirement, a multi-level screening process based upon the complexity, output and certification level of the generation facility and the effort to standardize the interconnection process across the Commonwealth. Differences include specific timelines for the individual screens, the requirement for a lock-box device to permit access to generator facilities and the limitation that non-inverter based equipment be processed under a Level 3 screen rather than a Level 2 screen.

From the foregoing, the Commission believes that the final-form regulation is “consistent” with the regulations in neighboring states, albeit not identical. It is important to note that the final-form regulation was developed, in part, using the MADRI process which included input from almost all of the neighboring state public utility commissions. In addition, not all of the neighboring states have finalized their interconnection standards while some (such as New Jersey and New York) have finalized standards which are not identical. Accordingly, we interpret the Act’s requirement to adopt an approach which serves Pennsylvania while being consistent, but not necessarily identical, with neighboring states. To that end, we have adopted a multi-level screening process with specific timelines and specific technical requirements. That type of system is, in general, consistent with New Jersey and other surrounding states that have standards in place.

Review Timelines

Positions of Parties

The IRRC noted that several comments argued that the timelines for review provided in the various screens were too long. As noted, Penn Future, the Pennsylvania Environmental Council, and SGC think the review process is too long. Those Parties would like to see the review periods mirror those used in the New Jersey interconnection standards. DEP proposed that the Level 1 review period should be shorter. SGC suggested that the Level 1 review should not exceed 20 business days, Level 2- 25 business days, Level 3-180 business days, and Level 4-30 business days. Citizens Electric and Wellsboro Electric noted the potential review burden on a small utility. They noted their limited financial and personnel resources available to conduct review of customer-generator applications, and proposed that the regulations provide for flexibility to accommodate small EDCs. The EAPA supported most of the proposed review timelines for Level 1 through Level 4.

Citizens, DEP, PECO and SGC offered comments about how the timelines should be handled during an EDC's emergency situation. Citizens propose that the commission adopt regulations concerning an extension of the Level 1 through Level 4 timelines in such situations. All the other commentators suggest that the Commission should consider extensions of the timelines on a case-by-case basis.

Disposition

We have analyzed the proper balance between an expedited review process and providing the EDC with adequate time to properly review a customer-generator's

interconnection application without compromising safety, reliability, and creating additional personnel costs for the EDC. As part of our drafting of the timelines, we have participated in the MADRI Interconnection Working Group and reviewed interconnection guidelines of other states including New Jersey.

Based on our analysis and the comments that we have received, we believe the timelines in the regulations offer the proper balance between an expedited review process for the customer-generator and adequate time for the EDC to review the potential project for safety and reliability. A customer-generator that is proposing a project with a fifteen to twenty year life will not be deterred with a review time slightly longer than the review time in another state. The payback to the customer over the fifteen to twenty years will be about the same regardless of whether the project takes a slightly longer review period to approve. A shorter review process could require the EDC hiring more staff to make certain the shorter review period is met, which will result in additional personnel costs to the ratepayer.

We hasten to add that the timelines set forth in the regulation are *maximum* timelines. Depending on the number of pending interconnections, the actual review time could be much less. We also expect that as the EDCs and equipment vendors become more experienced with the review processes, the actual time for review will be reduced. Therefore, we will maintain the review timelines from the proposed regulations.

We acknowledge that during an emergency situation an EDC may need to re-direct personnel to assist in addressing the emergency situation. However, the Commission does not believe that a regulation is required to address this issue. It is possible that an EDC could work informally with interconnection applicants to obtain extensions in emergency situations. Failing that, an affected EDC could seek a waiver of specific timelines from the Commission.

Inverter/non-inverter distinctions for interconnection

The IRRC comments that several sections of the regulation distinguish between inverter and non-inverter based equipment. The IRRC notes that the Act contains no mention of whether an alternative energy source requires inverter based equipment or not. The IRRC requests that we explain why there should be a distinction between inverter and non-inverter based equipment in the regulation.

The regulation governs the physical interconnection of generation facilities to distribution circuits. Different types of generation facilities (i.e., inverter and non-inverter based equipment) have different engineering aspects and potentially different impacts on the circuits involved. Generally speaking, inverter based equipment that has been certified requires a much less complex review process than a rotary based system that has not been certified. Accordingly, it is appropriate for the review screens to provide different approaches to the different types of equipment. Because this issue deals with physical interconnection, it is the type of equipment that is important, not necessarily the type of alternative energy source used.

Advanced Notice of Final Rulemaking

The IRRC notes that several issues remain in contention at this stage of the rulemaking process. The IRRC suggests that the Commission continue the stakeholder process and publish an Advanced Notice of Final Rulemaking in an effort to resolve any remaining controversy.

As we discussed above, this process began in the early spring of 2005. The issues have been discussed several times in the Pennsylvania stakeholder process and at length

during the summer of 2005 during the MADRI process. Participants were given the opportunity to comment on a staff initiated straw man proposal and then given an additional opportunity to comment on the November NOPR. At this point in time, the Commission understands the positions of those commenting on the issues and has received sufficient information to enable us to balance the relative interests involved and achieve the best results for Pennsylvania, consistent with the requirements of the Act. Accordingly, we believe that the additional time spent in further review will only delay implementation of the regulation without providing consensus on any of the issues which remain in controversy.

D. § 75.33. Fees and Forms

Positions of the Parties

The IRRC commented that fees and forms are not specified in this section other than the notation that the Commission will develop the fees. The IRRC requests that the Commission provide detailed information on the fees and forms required in this regulation. The DEP expressed the concern that failure to provide specific fees and forms in this regulation will further delay implementation of the interconnection standards and requests that any proceedings to develop fees and forms be initiated as soon as possible.

Disposition

In the November NOPR, we stated that standard forms and fees would be developed through an iterative process involving Commission tentative and final Orders. We expect to use the stakeholder approach in the development of both fees and forms to a greater extent than the November NOPR may have suggested. The nature of the

Commission action which follows the stakeholder process will be determined later. As we move through that process, we will bear in mind the concerns expressed regarding improper subsidies and the need for prompt implementation. As suggested by the IRRC, the fees developed in that process will be placed in EDC tariffs. It has been the Commission's experience that fees and forms of the nature at issue here are not readily addressed in rulemakings, particularly if changes are warranted as all participants gain experience during implementation.

**E. § 75.34(2). Limitation of Level 2 Reviews to Inverter Based Equipment;
§ 75.34(4). Use of Level 4 Reviews for Interconnection to Area Networks**

Under Section 75.34 (2), an EDC uses Level 2 for evaluating interconnection requests for inverter based systems that have a nameplate capacity rating of 2 MW or less, the equipment is certified, and the proposed interconnection is to a radial distribution circuit, or spot network limited to serving one customer. Section 75.34(4) provides for an expedited review process for those customers not qualifying under Level 1 or Level 2 and that do not export power beyond the point of common coupling.

Positions of Parties

Penn Future, SGC, Pennsylvania Energy Council, Farm Bureau, Pa. Department of Agriculture, DEP, Pennsylvania Environmental Council, and Native Energy support allowing non-inverter systems to be reviewed under Level 2. They note that many bio-digesters and low-impact hydro projects rely on rotating equipment and would not be eligible for the more expedited Level 2 review. Because of the greater cost of a Level 3 review, they suggest this regulation could cause a barrier to entry. They further mention that FERC Order 2006 allows Level 2 reviews of generators similar to those discussed here, but require additional information from the generator.

The EAPA and PECO support the retention of Level 2 reviews limited to inverter based systems. They note that the use of inverter technology eliminates or greatly reduces the impact the facility will have on the Area Electric Power System. However, they suggest that non-inverter based generation has the potential to deliver five to seven times the fault current an inverter based generator of equal size can deliver. This can significantly impact the ability of the distribution system's protective equipment to adequately detect a fault condition within an acceptable time period and lead to equipment damage and outage conditions.

The EAPA and PECO support the permissive use of a Level 4 review. The EAPA notes that the intent of the Level 4 review was to work with the alternative energy community to provide an accommodation while simultaneously maintaining safety and reliability. Therefore, they emphasize that it is imperative that the EDCs maintain the authority over the level of review required for interconnection to an area network. SGC supports the Level 4 review process for larger generators, but suggests all language be eliminated that does not deal with the larger non-exporting generators.

Disposition

The EAPA makes a strong argument why Level 2 reviews should apply only to inverter based generators. The potential impact on system reliability and safety must be an over-riding consideration. A non-inverter system that could potentially deliver five to seven times the fault current of an inverter system is a concern and requires the level of analysis offered in a Level 3 review.

Other comments noted that a Level 3 review will add to the cost of a bio-digester project and could cause a barrier to entry. We agree that the project cost for bio-digesters

will increase under a Level 3 review. However, the incremental cost will not be so large as to inhibit entry into the market for a project that could cost \$700,000 to \$800,000. It is our expectation that the actual incremental cost for a Level 3 review could be less than 1% to 2% of the total project cost. Accordingly, we will decline to modify the Level 2 prerequisites.

In the MADRI Interconnection Working Group, the EDCs agreed to include a Level 4 review of an interconnection to an area network in limited circumstances and only at their discretion. The Level 4 review is predicated on the EDC possessing enough data to accurately assess the impact of the generator on the system. SGC supports the Level 4 review process for smaller generators. We agree that the EDC must make the determination whether enough information exists under a Level 4 review to allow them to accurately assess system reliability and safety, or whether the project should be reviewed under Level 3.

F. § 75.36(2) Total Nameplate vs. Incremental Evaluation

Section 75.36(2) of the proposed regulations provides that 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.

Position of the Parties

PECO, Citizen's Electric and the EAPA agree with the proposed regulations as written. In order to ensure system reliability, the interconnection review must be based on the total nameplate capacity of the interconnection facility. The parties contend that the total evaluation is vital to an EDC when determining the relaying necessary to properly

protect the distribution system. Further, what must be considered when reviewing an interconnection request is the aggregate generation connection to a line or line segment, not only the nameplate capacity of a single interconnection facility. Evaluating the aggregate generation is the only way to ensure that safety and quality of service of the line is not jeopardized and system reliability is maintained.

SGC, the OCA and Penn Future recommend that the level of review assigned to new interconnection applications be based on the proposed new incremental capacity. The parties contend that the aggregate impact of existing distribution generation capacity on a circuit is addressed by each Level of the screening criteria. The OCA urges the Commission to follow the model outlined in PJM Manual 14A and 14B.

Disposition

Safety and quality of service remain paramount to any cost savings that may occur in developing these standards. We simply cannot ignore design and service conditions that afford reliable service and a continuous supply of electricity. SGC commented that the Commission may be attempting to prevent sequential incremental additions to a single installation as a means of circumventing the application of a more intensive interconnection review. This is not the case. As stated by Citizens, the appropriate engineering and safety design for a facility must consider the maximum potential adverse impact of the facility on the distribution system. This will occur only if the review is based on the total nameplate capacity. The entire nameplate electric capacity should be examined at the time of application.

With regard to the use of the PJM approach, this regulation deals with interconnection at the distribution level, not the higher transmission level.

The PJM Manuals address interconnection procedures for high voltage and extra high voltage transmission lines that possess a higher design and service condition for new loads. This is not the case with smaller distribution service systems that require more scrutiny when incremental load is added. Based on the comments presented on this issue, we will maintain the language presented in the proposed rulemaking and favor on the side of caution when dealing with operational issues.

G. § 75.36(3). EDC Records

The IRRC suggests several modifications to this provision to provide consistency and greater clarity. We have modified subsection 75.36(3)(ii) to require reporting on the number of days to complete interconnection requests rather than the “times” required for completion. The IRRC suggests greater specificity in subsection 75.36(3)(v) which required the reporting of the number of requests that were not processed within “established timelines.” The regulation provides timelines in several areas. Accordingly, we have modified the subsection to provide that reporting will be required for the number of requests which were not processed in accordance with the timelines established in this subchapter. We believe that will provide sufficient direction to the EDCs to produce the information the Commission seeks.

H. § 75.36(6). Interconnection Request

The IRRC suggests modifying this provision to provide greater clarity. We agree. The modified provision will simply provide that when an interconnection request is deemed complete, any modification other than a minor equipment modification shall require the submission of a new interconnection request, unless otherwise approved by the EDC.

I. § 75.36(8) Single Point of Interconnection

Under Section 75.36(8), regarding additional general requirements, the proposed regulation states that “an EDC may propose to interconnect more than one small generator facility at a single point of interconnection.” This may be done to minimize the cost of the interconnection project to the customer-generator. Additionally, if the customer-generator requests to have more than one generator facility interconnected at a single point on the EDC’s system, the EDC may not unreasonably refuse the customer-generator’s request. Finally, this section provides that if an EDC proposes a single point of interconnection for more than one generation facility of a single customer-generator, that customer-generator may elect to pay the entire cost of separate interconnection points.

Positions of the Parties

First, we will address the four areas of concern presented by the IRRC on this portion of the proposed regulations. The IRRC expressed concern that the first sentence of the proposed regulation is not clear and suggested that it be redrafted. Second, the IRRC questioned whether minimization of the EDC’s costs would be considered or if only the customer-generator’s costs were subject to such analysis. Additionally, should EDC costs to enhance system reliability and safety be part of this analysis? The IRRC’s third comment suggests that the regulation provide clear guidance on what is “unreasonable” regarding refusal of a joint facility, single point interconnection. Lastly, the IRRC suggested that we reconcile the language in this section – “May not unreasonably refuse to do so,” with the language at § 75.37(a)(5) which states “construction of facilities by the EDC on its own system is not required to accommodate the small generator facility.”

We agree with the IRRC regarding the clarity of the first sentence of Section 75.36(8), and shall redraft that language for inclusion in the final regulation. Regarding the IRRC's second comment, the EDC is required to provide to the customer-generator a description and non-binding estimated cost of facilities required to interconnect the project in a safe and reliable manner. The EDC will not be responsible for any costs incurred to install a customer-generator interconnection. All of the interconnection's associated costs will be the responsibility of the customer-generator. Additionally, since all costs of physical interconnection are the responsibility of the customer-generator, there is no reason to perform an analysis of how to minimize the EDC's costs.

The term "unreasonable" is used in this regulation to remind the EDCs that the purpose of the Act is to encourage the development of alternate sources of energy and to deny such a request without good reason would be violative of the Act. It is simply an affirmative statement of the underlying principle that all parties to an interconnection transaction are expected to act in good faith. This is very similar to the "arbitrary and capricious" standard which governs certain Commission actions. The term is not so vague as to preclude an EDC from conforming its actions to its intent. In addition, any EDC that has reservations is free to seek an opinion of counsel or petition the Commission for a Declaratory Order.

We believe the language in Section 75.37(5) which states that an EDC is not required to construct facilities on its system to accommodate a small generation facility, is not in conflict with Section 75.36(8). The meaning of Section 75.37(5) is that an EDC is not required, for example, to extend its distribution system or install additional line poles or transformers to accommodate the installation of a customer-generator interconnection. Even though pursuant to Section 75.36(8), an EDC may not unreasonably refuse a customer-generator's request for a single point interconnection of

multiple generation facilities, no cost of the interconnection will be the responsibility of the EDC.

Parties commenting on the proposed regulations had varying positions on this Section. The EAPA does not oppose the concept but, points to cost recovery as a subordinate issue. The OSBA stated that the language implies that the EDC is to pay the cost if the customer-generator chooses to use a single point of interconnection for multiple generation facilities. Additionally, the OSBA asserted that to avoid subsidization, this cost should be paid by the customer-generator. As explained above, we shall clarify the language in the proposed regulation to remove any ambiguity as interpreted by the OSBA.

Penn Future and PEC stated that if the EDC requests a single point of interconnection for multiple generator facilities, then the EDC must be responsible for the costs, otherwise these costs would be a significant barrier to the customer-generator. Conversely, PECO stated that the customer-generator is the party responsible for the costs of interconnection at any point on the EDC's system. Whether or not the interconnection is located on the same point as other interconnections should not shift the cost responsibility to the EDC. We do not agree with the interpretation of Penn Future and PEC wherein the EDC would 'request' a single point of interconnection for multiple generator facilities. The proposed regulation states that an EDC may 'propose' a single point of interconnection. Additionally, regardless of the fashion in which the EDC communicates to the customer-generator the benefits of, or the engineering constraints involved in, utilizing a single point of interconnection, the customer-generator remains responsible for the costs associated with the project.

Finally, SGC believes the costs should be shared proportionally among the customer-generators interconnected at any single point, pursuant to PJM's model. The

SGC comment has merit and should be considered when and if two customer-generators facilities may be interconnected to an EDC's system at the same point, thereby providing a cost savings to each customer-generator. However, we believe that matter is more appropriately resolved in the interconnection agreements rather than through regulation.

Disposition

Based upon the foregoing comments provided by the IRRC as well as the Parties as described above, we shall redraft the language for this section, as follows:

(8) To minimize the costs to customer-generators, An an EDC may propose to interconnect more than one small generator facility at a single point of interconnection. ~~to minimize costs to the customer generator, and~~ When a customer-generator requests a single point of interconnection for multiple generation facilities, the EDC may not unreasonably refuse a request to do so. When an EDC proposes a single interconnection point for multiple generation facilities of a customer-generator, and the customer-generator elects not to accept the EDC's proposal, ~~An the interconnection customer customer-generator may elect to~~ shall pay the entire cost of a separate point of interconnection facilities for each generation facility.

J. § 75.36(9) and (10) Additional General Requirements (Lockbox)

Section 75.36 (9) and Section 75.36 (10) address the need to isolate the small generator facility from the distribution system by means of an isolation device accessible by the EDC. The device is necessary to ensure system reliability and safety, and the safety of EDC lineworkers. In lieu of an external disconnect switch, the Commission finds that a balanced and measured approach is the allowance of a readily accessible lock box.

Positions of Parties

The various commentors disagreed about the need for a disconnect device and the cost for such a device. Penn Future and SGC strongly oppose the requirement for an external disconnect switch or a lockbox to allow access to the disconnect switch by way of a lockbox. They note that an external disconnect switch can be costly and unnecessary when the inverter meets the IEEE 1547 standard for disconnecting from the grid. They encourage the Commission to adopt regulations similar to New Jersey that do not require either a disconnect switch or a lock box.

The OCA, DEP, and EAPA agree that an accessible lock box is a reasonable compromise that mitigates the safety concern and also limits the cost. DEP questions the need to require an isolation device on a small generator project, but believes that the external lockbox offers an acceptable compromise. The OCA strongly supports the lockbox approach. They endorse an approach that ensures that consumers, utility employees and others are not endangered by unanticipated power flows into the distribution network, and feel the lockbox concept offers the proper balance between safety and cost. The OCA appears to support the position of allowing the EDC to install the lockbox. The EAPA also agrees that the lockbox proposal offers a reasonable alternative to mandating an accessible disconnect device. They suggest that the lockbox alternative was proposed to benefit the customer-generator and the lockbox and installation should be paid by the customer. They also propose that the customer-generator should be responsible for the acquisition and installation of the lockbox.

Disposition

We agree with Penn Future and SGC that a certified inverter system that meets IEEE 1547 standards offers only a small chance of a safety problem to workers,

customers, or other customers, but we agree also with OCA, DEP, and EAPA that the access to a disconnect switch with the lockbox system offers a low-cost solution and provides an extra level of safety. We will maintain the provision that a customer who does not wish to provide an accessible external disconnect switch, must provide access to a disconnect switch through the lockbox system. We believe a lockbox alternative benefits both the customer-generator and the EDC, therefore, we are requiring the EDC to provide lockboxes to the customer-generator at a price to cover the EDC's cost of the lockbox. The customer-generator will be responsible for paying the cost of the lockbox and is responsible for the installation of the lockbox.

K. §§ 75.37(b)(2), 75.38(b)(2), 75.40(c)(1)(iv) and 75.40(c)(5)(iv)

Interconnection to Spot and Area Networks

In the November NOPR, we addressed the issue of an acceptable limitation on the amount of the aggregate capacity which would be permitted to interconnect to the load side of spot networks and area networks. For each type of network, we expressed the maximum limit as 5% of the network's maximum load. We requested detailed technical information from any party which desired a modification to that limitation.

Positions of the Parties

The EAPA states that for spot networks, the addition of a 50kW cap to the 5% of maximum load is "important from a safety and reliability perspective." The EAPA was more specific when it addressed area networks. It commented that a 50kW cap was even more important in those instances because the load on those networks is usually much greater than spot networks. Accordingly, a 5% limitation would provide for much greater

capacity additions and provide for greater risks that network protectors would operate incorrectly.

The Pennsylvania Environmental Council questions the need for a 50kW cap in addition to the 5% percentage cap. The SCG also questions the addition of a 50kW cap. The SGC notes that for spot networks, the number of customers is very small so that interconnection standards for these networks can be somewhat relaxed provided the proper studies are done. The SCG observes that both Colorado and New Jersey permit interconnections to networks and that Colorado provides for a 300kW cap, not a 50kW cap. For area networks, New Jersey permits inverter-based generators up to the smaller of 10% of the network minimum load or 500kW. Non-inverter based interconnections are permitted provided there is appropriate assurance that no power will leave the generation site. Penn Future also questions the need for a 50kW cap in addition to the 5% limitation in spot and area network interconnections. Penn Future advises that it is aware of no reason why a 50kW cap would be required for safety or reliability.

Disposition

We will decline to adopt the EAPA's requested modification. In doing so, we note that the interconnection to spot networks are processed under Level 1 and Level 2 reviews which provide for interconnection of certified inverter-based equipment that is equipped with redundant protective devices which presents extremely low risk factors. Interconnection to area networks is processed under a Level 4 review. An EDC will conduct an area network impact study to determine if any adverse impacts will result from the interconnection. Depending on the results of that study, the EDC may refuse the interconnection even if the generation facility is within the 5% cap. Based upon the foregoing, including the comments regarding the New Jersey and Colorado approaches,

we will retain the 5% cap without an additional 50kW cap for spot and area network interconnections.

L. § 75.37(c). Level 1 Review

The IRRC suggests a minor modification to subsection (4) to provide that an EDC shall approve the interconnection request rather than sign it so as to be consistent with subsection (5). We will adopt this suggestion.

M. § 75.38(b)(4) Level 2 Interconnection Review – Fault Current Limits

The Level 2 screen provides that the proposed small generator facility, in aggregate with other generation on the distribution circuit, may not cause any distribution protective devices and equipment, or other customer equipment on the electric distribution system to be exposed to fault currents exceeding 85% of the short circuit interrupting capability, nor may an interconnection request be made on a circuit that already exceeds 85% of the short circuit interrupting capability.

Positions of Parties

The EAPA maintains that the 80% fault current limitation should be adopted. They note that they do not have a record of the ratings of customer owned equipment which require a more conservative fault current limitation. Penn Future, the Pa. Environmental Council, and SGC argue for at least a 90% level. They note that FERC Order 2006 calls for an 87.5% level, and the MADRI model adopted a 90% level. The Pa. Environmental Council felt that that 85% fault current level standard could cause de-facto barriers to entry for customer-generators.

Penn Future and SGC asked the Commission to conduct additional research on such items as the percent of distribution circuits that would be disqualified under the 85% limit and the number of circuits that are being affected. SGC suggests that customer-generators are being held to a higher margin of safety than normal utility practice.

Disposition

The Commission has examined this issue in more detail. We have requested additional information from the EDCs on the limits of their circuits. In response to the suggestion that the Commission should adopt either the FERC Order 2006 87.5% or the MADRI 90% level, we researched the derivation for these levels and found each number was adopted without specific technical analysis to support the level. The FERC Order 2006 adopted 87.5% as an average between the 90% level proposed by the solar lobby and others, and the 80% to 85% proposed by the EDCs. The MADRI level of 90% was never agreed to by the EDCs and some other participants to the MADRI process, but was adopted by the moderator of the MADRI working group with the support of the solar lobby and some others.

SGC states in their comments, "There appears to be no technical basis for the new lower level," referring to our adoption of the 85% fault current level. This statement is completely inaccurate. We asked for technical and quantitative analysis of this issue and received only one quantitative analysis. PPL offered a reasoned technical analysis of why a level of 80% to 85% was appropriate. SGC's only response to PPL's analysis was, "...this analysis is misinforming." Neither SGC nor anyone else offered a written, technical critique of PPL's conclusion. Those parties supporting the 90% level offer no analysis and assert only that we should adopt a compromise that was reached in the

FERC Order 2006, a number was unilaterally adopted by MADRI, or the limitation that was adopted in the New Jersey interconnection regulations.

The best information that the Commission has received to date strongly supports the position that an 85% limit will not impact the vast majority of circuits. Accordingly, the 85% limit will not serve as a *de facto* barrier as suggested by the SGC. Conversely, the 85% limit will provide protection that avoids potential fault current problems. Based on the quantitative analysis that we reviewed and the additional research conducted by the Commission, we will retain the 85% fault current level.

N. §§ 75.38 and 75.39. Level 2 and Level 3 Requests for Extension

The IRRC notes that both Level 2 and Level 3 reviews provide that a customer-generator may request an extension of time to sign an interconnection agreement and that the request may not be “unreasonably denied” by the EDC. The IRRC expresses its concern that the provisions do not provide any criteria for an EDC to use to establish the reasonableness of its actions.

The phrase that an EDC will not act to unreasonably deny a request for extension simply affirmatively states the proposition which runs throughout the standards that all participants will act in good faith. While the provisions at issue do not provide precise criteria, we do not believe that the phrase is so vague as to preclude an EDC from determining its meaning and acting accordingly. The provisions are very similar to the arbitrary and capricious standard that the Commission must follow. If an EDC has reservations, it can seek clarification through a request for opinion or a petition for declaratory order. It is anticipated that at worst, there will very rarely be any controversy over these provisions and, at best, no controversy at all. Accordingly, we will not modify the provisions.

O. § 75.40 Level 4 Interconnection Review

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. In addition, a Level 4 review may be used 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.

Positions of the Parties

As part of comments filed in response to the Initial Staff Proposal of August 25, 2005, the SGC suggested eliminating the Level 4 review and addressing those applications under Level 2 reviews for non-exporting generators. 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 Commission requested additional comments on these positions to clarify the technical aspects. It was noted that specific technical support for a stated position is crucial to the Commission's determination in these areas.

In response to the Commission's request, two parties, SGC and PECO, provided additional comments on this issue. SGC believes that the Level 4 review for larger generators that do not export power to the grid is a step in the right direction. However,

SGC requests that the Commission remove all language from Level 4 procedures that do not deal with the larger non-exporting generators since it is confusing. PECO notes that Level 4 review must be permissive but not mandatory in nature.

Disposition

In their comments, the SGC, EAPA and PECO offer general statements concerning Level 4 review without providing technical support for their positions as requested by the Commission. There is no analysis showing the adverse impacts created by retaining Level 4 review as provided in the proposed regulations. Absent such an analysis, the Commission declines to remove or alter the Level 4 language.

P. § 75.40. Level 4 Interconnection Review

The IRRC comments that Section 75.40(c)(7)(i) provides for “25 days” for the conduct of an impact study. Other provisions specify timeframes in “business days.” The IRRC recommends that this provision be modified to be consistent with other timeframes. We will clarify this provision and provide for 25 calendar days.

CONCLUSION

The modifications discussed herein address the concerns of the Parties and are in the public interest. We have reviewed all of the comments and, to the extent a Party’s position was not adopted, it was nonetheless carefully considered. We wish to compliment all those who filed comments. They were helpful in arriving at a final rulemaking that is consistent with the Act, the Code and fulfills the Act’s intent to remove barriers to interconnection and provide appropriate treatment to customer-generators who wish to interconnect to the distribution system.

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, the Commission adopts the regulations at 52 Pa. Code §§ 75.21-75.51, as noted above and as set forth in Annex A, attached hereto;

THEREFORE,

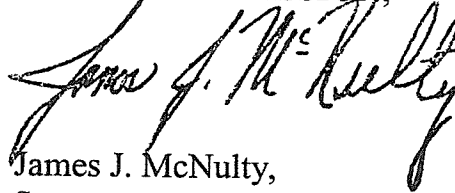
IT IS ORDERED:

1. That the regulations at 52 Pa. Code Chapter 75 are amended by adding Sections 75.21-75.51 as set forth in Annex A.
2. That the Secretary shall submit this order and Annex A for review by the designated standing committees of both houses of the General Assembly, and for review and approval by IRRC.
3. That the Secretary shall submit this order and Annex A to the Office of Attorney General for approval as to legality.
4. That the Secretary shall submit this order and Annex A to the Governor's Budget Office for review of fiscal impact.
5. That the Secretary shall duly certify this order and Annex A and deposit them with the Legislative Reference Bureau for publication in the *Pennsylvania Bulletin*.
6. That a copy of this order and Annex A be served upon the Department of Environmental Protection, all jurisdictional electric utility companies, licensed

electric generation suppliers, the Office of Consumer Advocate, the Office of Small Business Advocate and all Parties filing comments in this proceeding.

7. That these regulations shall become effective upon publication in the *Pennsylvania Bulletin*.
8. That the contact persons for this 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: August 17, 2006

ORDER ENTERED:

AUG 22 2006

**PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265**

Public Meeting held September 15, 2006

Commissioners Present:

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

Final 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

FINAL RULEMAKING ORDER - RECONSIDERATION

BY THE COMMISSION:

On August 22, 2006, we entered our Final Rulemaking Order at these dockets regarding Interconnection Standards in accordance with the Alternative Energy Portfolio Standards Act of 2004, 73 P.S. §§ 1648.1-1648.8 (Final Rulemaking Order). Upon further review of the Final Rulemaking Order, and the Annex A attached thereto, it appears that several corrections to Annex A are required to conform the regulations to the text of the Order and the intent of the Regulation.

Four corrections will be made. First, Section 75.22, relating to definitions, contains a definition for *Interconnection Agreement* and a definition for *Standard Small Generator Interconnection Agreement*. The definition for *Interconnection Agreement* is a fairly basic definition and does not reference any of the review screens. The definition for *Standard Small Generator Interconnection Agreement* specifically states that it applies to the review screens for Levels 2, 3 and 4. However, Section 75.37 fails to indicate any requirement for an *Interconnection Agreement* for Level 1 applications. We will correct the Regulation by deleting the definition for *Interconnection Agreement*, revise the definition for *Standard Small Generator Interconnection Agreement* to apply to all screens and expressly provide for an *Interconnection Agreement* for Level 1 applications by adding Section 75.37(c)(4)(iv).

The second correction involves the installation of the lock box provided for in Section 75.36(10). The Final Rulemaking Order provides that the customer-generator is responsible for installation of the lock box provided by the Electric Distribution Company (EDC). (Final Rulemaking Order at 35). Section 75.36(10) of the Regulation provides that the EDC will both provide and install the lock box. The intent of the Regulation is consistent with the text in the Final Rulemaking Order, accordingly, Section 75.36(10) will be modified to provide that the customer-generator will install the lock box provided by the EDC.

The third correction relates to Section 75.38(b)(1). That Section provides that the aggregated generation on a radial distribution circuit may not exceed 15% of “the line section annual peak load *as most recently measured at the sub station.*” (Emphasis supplied). Because of the definition of “line section” in Section 75.22, measurement of load for purposes of this Section will rarely, if ever, take place at a sub station. Accordingly, we will modify Section 75.38(b)(1) to delete the phrase “as most recently

measured at the sub station.” By deleting this phrase, the modified Section will retain the upper limit of aggregated generation and measurement of load will take place on the line section involved in the interconnection.

The fourth modification involves Section 75.39 (a)(1) of the Regulation. The current Section provides that the Level 3 screen applies to small generator facilities that have an electric nameplate capacity “that is less than 2 MW.” The entire Regulation is designed to apply to interconnections for customer-generators as defined by the Alternative Energy Portfolio Standards Act. That nameplate capacity limit is 2 MW or less. We will modify Section 75.39(a)(1) of the Regulation to be consistent with the statutory capacity limit.

CONCLUSION

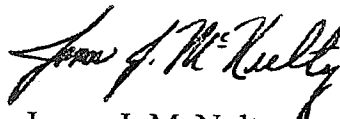
Pursuant to Section 703(g) of the Public Utility Code, 66 Pa. C.S. § 703(g), we have reconsidered our Final Rulemaking Order entered August 22, 2006, at these Dockets and determined that the modifications discussed herein are in the public interest.

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, the Commission adopts the regulations at 52 Pa. Code §§ 75.21-75.51, as noted in our Final Rulemaking Order entered August 22, 2006, as modified herein and as set forth in Annex A, attached hereto; **THEREFORE,**

IT IS ORDERED:

1. That the order entered August 22, 2006, at this docket is modified consistent with this order and as set forth in Annex A attached hereto.
2. That a copy of this order and Annex A be served upon the Department of Environmental Protection, all jurisdictional electric utility companies, licensed electric generation suppliers, the Office of Consumer Advocate, the Office of Small Business Advocate and all Parties filing comments in this proceeding.
3. That the contact persons for this 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: September 15, 2006

ORDER ENTERED: **SEP 19 2006**

ANNEX A
TITLE 52. PUBLIC UTILITIES
PART 1. PUBLIC UTILITY COMMISSION
Subpart C. FIXED SERVICE UTILITIES
CHAPTER 75: ALTERNATIVE ENERGY PORTFOLIO
STANDARDS
Subchapter C: INTERCONNECTION STANDARDS

GENERAL

75.21. Scope.

75.22. Definitions.

INTERCONNECTION PROVISIONS

75.31. Applicability.

75.32. Interconnection requests.

75.33. Fees and forms.

75.34. Review procedures.

75.35. Technical standards.

75.36. Additional general requirements.

75.37. Level 1 interconnection review.

75.38. Level 2 interconnection review.

75.39. Level 3 interconnection review.

75.40. Level 4 interconnection review.

DISPUTE RESOLUTION

75.51. Disputes.

GENERAL

§ 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 act.

§ 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.

ANTI-ISLANDING - THE PROTECTIVE FUNCTION WHICH PREVENTS ELECTRICAL GENERATING EQUIPMENT FROM EXPORTING ELECTRICAL ENERGY WHEN CONNECTED TO A DE-ENERGIZED ELECTRICAL 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--

(i) 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.

(ii) The term has 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.

CENTER TAPPED NEUTRAL TRANSFORMER - A TRANSFORMER WITH A TAP IN THE MIDDLE OF THE SECONDARY WINDING, USUALLY USED AS A GROUNDED NEUTRAL CONNECTION, INTENDED TO PROVIDE AN OPTION FOR THE SECONDARY SIDE TO USE THE FULL AVAILABLE VOLTAGE OUTPUT OR JUST HALF OF IT ACCORDING TO NEED.

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:

(i) IEEE Standard 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, as amended and supplemented.

(ii) 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.

DRAW-OUT TYPE CIRCUIT BREAKER – A SWITCHING DEVICE CAPABLE OF MAKING, CARRYING AND BREAKING CURRENTS UNDER NORMAL CIRCUIT CONDITIONS AND ALSO, MAKING AND CARRYING FOR A SPECIFIED TIME AND BREAKING CURRENTS UNDER SPECIFIED ABNORMAL CIRCUIT CONDITIONS, SUCH AS THOSE OF A SHORT CIRCUIT. A DRAW-OUT CIRCUIT BREAKER HAS TWO PARTS, THE BASE, WHICH IS BOLTED AND WIRED TO THE FRAME AND THE ACTUAL BREAKER, WHICH SLIDES INTO AND ELECTRICALLY MATES WITH THE BASE. A DRAW-OUT CIRCUIT BREAKER CAN BE PHYSICALLY REMOVED FROM ITS ENCLOSURE CREATING A VISIBLE BREAK IN THE CIRCUIT.

Electric distribution system--

(i) 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.

(ii) Electric distribution system has the same meaning as the term Area EPS, as defined in 3.1.6.1 of IEEE Standard 1547.

*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.

*EQUIPMENT PACKAGE--*A GROUP OF COMPONENTS CONNECTING AN ELECTRIC GENERATOR WITH AN ELECTRIC DELIVERY SYSTEM, AND INCLUDES ALL INTERFACE EQUIPMENT INCLUDING SWITCHGEAR, INVERTERS, OR OTHER INTERFACE DEVICES. AN EQUIPMENT PACKAGE MAY INCLUDE AN INTEGRATED GENERATOR OR ELECTRIC SOURCE.

*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 THE Institute of Electrical and Electronics Engineers, Inc. (IEEE) Standard 1547 (2003) "Standard for Interconnecting Distributed Resources with Electric Power Systems", AS AMENDED AND SUPPLEMENTED, at the time the interconnection request is submitted.

*IEEE standard 1547.1--*The most current official published version of THE IEEE Standard 1547.1 (2005) "Conformance Test Procedures for Equipment Interconnecting

Distributed Resources with Electric Power Systems", AS AMENDED AND SUPPLEMENTED, 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, OR 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 ELECTRIC distribution SYSTEM 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:

- (i) The Interconnection Feasibility Study.
- (ii) The Interconnection System Impact Study.
- (iii) 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 must 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.

NRTL--Nationally recognized testing laboratory--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.

RADIAL DISTRIBUTION CIRCUIT - A SYSTEM IN WHICH INDEPENDENT FEEDERS BRANCH OUT RADially FROM A COMMON SOURCE OF SUPPLY. FROM THE STANDPOINT OF A UTILITY SYSTEM, THE AREA DESCRIBED IS BETWEEN THE GENERATING SOURCE OR INTERVENING SUBSTATIONS AND THE CUSTOMER'S ENTRANCE EQUIPMENT. A RADIAL DISTRIBUTION SYSTEM IS THE MOST COMMON TYPE OF CONNECTION BETWEEN A UTILITY AND LOAD IN WHICH POWER FLOWS IN ONE DIRECTION, FROM THE UTILITY TO THE LOAD.

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.

SECONDARY LINE – A SERVICE LINE SUBSEQUENT TO THE UTILITY'S PRIMARY DISTRIBUTION LINE, ALSO REFERRED TO AS THE CUSTOMER'S SERVICE LINE.

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--The term has 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 SET OF STANDARD FORMS ~~form~~ of interconnection agreement AGREEMENTS approved by the Commission which is ARE applicable to a Level 2, Level 3 or Level 4 interconnection request REQUESTS pertaining to a small generating facility FACILITIES.

UL Standard 1741--Underwriters Laboratories' standard titled "Inverters Converters, and Controllers for Use in Independent Power Systems-", AS AMENDED AND SUPPLEMENTED.

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

INTERCONNECTION PROVISIONS

§ 75.31. Applicability.

The interconnection procedures 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.

§ 75.32. Interconnection requests.

Interconnection customers seeking to interconnect a small generator facility shall 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.

§ 75.33. Fees and forms.

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

§ 75.34. 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 1 or 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.

§ 75.35. 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.

§ 75.36. 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 NUMBER OF DAYS 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 THE timelines ESTABLISHED IN THIS SUBCHAPTER.

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

(5) EACH EDC SHALL ESTABLISH THE SPECIFIC MAILING ADDRESS AND EMAIL ADDRESS TO WHICH INTERCONNECTION REQUESTS AND QUESTIONS MUST BE SENT. THESE DESIGNATED ADDRESSES SHALL BE PLACED IN THE EDC'S TARIFF AND ON ITS WEBSITE.

(5)(I) 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 must 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 this 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) TO MINIMIZE THE COSTS TO CUSTOMER-GENERATORS, An AN EDC may propose to interconnect more than one small generator facility at a single point of interconnection. to minimize costs to the customer generator, and WHEN A CUSTOMER-GENERATOR REQUESTS A SINGLE POINT OF INTERCONNECTION FOR MULTIPLE GENERATION FACILITIES, THE EDC may not unreasonably refuse a request to do so. WHEN AN EDC PROPOSES A SINGLE INTERCONNECTION POINT FOR MULTIPLE GENERATION FACILITIES OF A CUSTOMER-GENERATOR, AND THE CUSTOMER-GENERATOR ELECTS NOT TO ACCEPT THE EDC'S PROPOSAL, An THE interconnection customer CUSTOMER-GENERATOR may elect to SHALL pay the entire cost of A separate POINT OF interconnection facilities FOR EACH GENERATION FACILITY.

(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 PROVIDED 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.

§ 75.37. Level 1 interconnection review.

(a) An EDC shall use the Level 1 interconnection review procedure for an interconnection request that meets the criteria in § 75.34(1) (relating to review procedures). An EDC may not impose additional requirements for Level 1 reviews not specifically authorized under this subchapter.

(b) The Level 1 screening criteria must consist of:

(1) 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.

(2) 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.

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

(4) 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.

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

(c) The Level 1 interconnection review procedure must consist of:

(1) 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.

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

(3) 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.

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

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

(ii) A certificate of completion has been returned to the EDC. COMPLETION OF LOCAL INSPECTIONS MAY BE DESIGNATED ON INSPECTION FORMS USED BY LOCAL INSPECTING AUTHORITIES.

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

(IV) THE INTERCONNECTION CUSTOMER HAS SIGNED A STANDARD SMALL GENERATOR INTERCONNECTION AGREEMENT. WHEN AN INTERCONNECTION CUSTOMER DOES NOT SIGN THE AGREEMENT WITHIN 30 BUSINESS DAYS AFTER RECEIPT FROM THE EDC, THE INTERCONNECTION REQUEST WILL BE DEEMED WITHDRAWN UNLESS THE INTERCONNECTION CUSTOMER REQUESTS TO HAVE THE DEADLINE EXTENDED. THE REQUEST FOR EXTENSION WILL NOT BE UNREASONABLY DENIED BY THE EDC.

(5) 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.

§ 75.38. Level 2 interconnection review.

(a) An EDC shall use the Level 2 interconnection review procedure for an interconnection request that meets the criteria in § 75.34(2) (relating to review procedures). An EDC may not impose additional requirements for Level 2 reviews not specifically authorized under this subchapter.

(b) The Level 2 screening criteria must consist of:

(1) 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.

- (2) 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 a spot network's maximum load.
- (3) 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.
- (4) 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.
- (5) The proposed small generator facility's point of interconnection may not be on a transmission line.
- (6) 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.
- (7) 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.
- (8) 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.
- (9) 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.
- (10) 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.
- (11) 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).

(12) 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.

(c) The Level 2 interconnection procedure must consist of the following:

(1) 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.

(2) 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.

(3) 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.

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

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

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

(iii) 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. 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~~ 20 BUSINESS days of the applicant's resubmittal.

(5) 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.

(d) 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 the determination.

(e) 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 nonbinding, 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.

(f) An interconnection customer shall have 30 business days or another mutually agreeable time frame 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:

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

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

(3) The interconnection customer provides a certificate of completion to the EDC. COMPLETION OF LOCAL INSPECTIONS MAY BE DESIGNATED ON INSPECTION FORMS USED BY LOCAL INSPECTING AUTHORITIES.

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

(g) 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.

§ 75.39. Level 3 interconnection review.

(a) Each EDC shall adopt the Level 3 interconnection review procedure in this section. An EDC shall use the Level 3 review procedure to evaluate interconnection requests that meet the following criteria 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:

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

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

(3) The small generator facility is less than 2 Mw and noninverter based.

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

(1) 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.

(2) 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.

(3) 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.

(4) 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 must 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.

(5) 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 nonbinding good faith estimate of the cost to perform the study.

(6) 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 nonbinding good faith estimate of the cost to perform the study.

(7) 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 nonbinding good faith estimate of the cost to perform the study.

(c) 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:

(1) Initial identification of any circuit breaker short circuit capability limits 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.

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

(5) 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.

(6) 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.

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

(d) An interconnection system impact study must evaluate the impact of the proposed interconnection on the safety and reliability of the EDC's electric distribution system. The study must 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 must 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.

(1) An interconnection system impact study must:

(i) Consider the following criteria:

(A) A short circuit analysis.

(B) A stability analysis.

(C) Voltage drop and flicker studies.

(D) Protection and set point coordination studies.

(E) Grounding reviews.

(ii) State the underlying assumptions of the study.

(iii) Show the results of the analyses.

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

(v) Indicate required distribution upgrades and provide a nonbinding good faith estimate of cost and time to construct the upgrades.

(2) 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 must include:

(i) A load flow study.

(ii) An analysis of equipment interrupting ratings.

(iii) A protection coordination study.

(iv) Voltage drop and flicker studies.

(v) Protection and set point coordination studies.

(vi) Grounding reviews.

(vii) Impact on system operation.

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

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

(1) 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 includes an outline of the scope of the study and a nonbinding good faith estimate of the cost to perform the study.

(2) 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 must identify:

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

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

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

(3) 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.

(4) 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.

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

(f) 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.

(g) 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.

(h) An interconnection customer shall have 30 business days, or another mutually agreeable time frame 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 shall proceed according to milestones agreed to by the parties in the standard small generator interconnection agreement. The interconnection agreement may not be final until:

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

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

(3) The interconnection customer provides a certificate of completion to the EDC. COMPLETION OF LOCAL INSPECTIONS MAY BE DESIGNATED ON INSPECTION FORMS USED BY LOCAL INSPECTING AUTHORITIES.

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

§ 75.40. Level 4 interconnection review.

(a) 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.

(b) 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.

(c) 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 following procedures:

(1) 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 meets the following criteria:

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

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

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

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

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

(3) The proposed small generator facility meeting the criteria under paragraph (1) shall be presumed appropriate for interconnecting to an area network and shall be further evaluated by the EDC based on the following procedures:

(i) 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.

(ii) 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.

- (iii) An EDC shall conduct the area network impact study at its own expense.
- (4) 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.
- (5) 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 the following criteria:
- (i) The electric nameplate capacity of the small generator facility is greater than 10 kW and equal to or less than 50 kW.
- (ii) The proposed small generator facility utilizes a Certified inverter-based equipment package for interconnection.
- (iii) The customer-generator installs reverse power relays or other protection functions that prevent power flow beyond the point of interconnection.
- (iv) The aggregated other generation on the area network does not exceed 5% of an area network's maximum load.
- (6) Construction of facilities by the EDC on its own system is not required to accommodate the small generator facility.
- (7) The proposed small generator facility meeting the criteria under paragraph (5) shall be presumed to be appropriate for interconnecting to an area network and shall be further evaluated by an EDC using the following procedures:
- (i) An EDC shall evaluate the interconnection request under Level 2 interconnection review procedures. The EDC shall have 25 CALENDAR days to conduct an area network impact study to determine any potential adverse impacts of interconnecting to the EDC's area network.
- (ii) 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.
- (iii) 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 its area network impact study and a written justification for denying the interconnection request.

(d) 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 the following criteria:

- (1) The small generator facility has an electric nameplate capacity of 2 MW or less.
- (2) 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.
- (3) The small generator facility uses reverse power relays or other protection functions that prevent power flow onto the utility grid.
- (4) The small generator facility will be interconnected with a radial distribution circuit.
- (5) The small generator facility is not served by a shared transformer.
- (6) Construction of facilities by the EDC on its own system is not required to accommodate the small generator facility.

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

- (1) 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.
- (2) 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.
- (3) 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.
- (4) 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 must 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.

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

(g) When a small generator facility satisfies the criteria under subsection (e), 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.

(h) 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.

(i) The interconnection customer shall have 30 business days, or another mutually agreeable time frame 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 may not be final until:

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

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

(3) The interconnection customer provides a certificate of completion to the EDC.
COMPLETION OF LOCAL INSPECTIONS MAY BE DESIGNATED ON
INSPECTION FORMS USED BY LOCAL INSPECTING AUTHORITIES.

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

DISPUTE RESOLUTION

§ 75.51. Disputes.

(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 this chapter, 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 Federal Energy Regulatory Commission 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.



PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH OF PENNSYLVANIA
HARRISBURG, PENNSYLVANIA

WENDELL F. HOLLAND
CHAIRMAN

September 28, 2006

The Honorable John R. McGinley, Jr.
Chairman
Independent Regulatory Review Commission
14th Floor, Harristown II
333 Market Street
Harrisburg, PA 17101

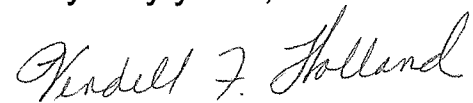
Re: L-00050175/57-245
Final Rulemaking
Interconnection Standards for
Customer-generators
52 Pa. Code Chapter 75

Dear Chairman McGinley:

Enclosed please find one (1) copy of the regulatory documents concerning the above-captioned rulemaking. Under Section 745.5(a) of the Regulatory Review Act, the Act of June 30, 1989 (P.L. 73, No. 19) (71 P.S. §§745.1-745.15) the Commission, on February 9, 2006, submitted a copy of the Notice of Proposed Rulemaking to the House Committee on Consumer Affairs, the Senate Committee on Consumer Protection and Professional Licensure and to the Independent Regulatory Review Commission (IRRC). This notice was published at 36 *Pa.B.* 942, on February 25, 2006. In compliance with Section 745.5(b.1) copies of all comments received were provided to your Commission and the Committees.

In preparing this final form rulemaking, the Public Utility Commission has considered all comments received from the Committees, IRRC and the public.

Very truly yours,

A handwritten signature in cursive script that reads "Wendell F. Holland".

Wendell F. Holland
Chairman

Enclosures

cc: The Honorable Robert M. Tomlinson
The Honorable Lisa Boscola
The Honorable Robert J. Flick
The Honorable Joseph Preston, Jr.
Legislative Affairs Director Perry
Chief Counsel Pankiw
Regulatory Coordinator DelBiondo
Assistant Counsel House
Mr. Shawley
Judy Bailets, Governor's Policy Office

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT
TO THE REGULATORY REVIEW ACT

ID Number: L-00050175/57-245

Subject: Interconnection Standards for Customer-generators
Pursuant to Section 5 of the Alternative Energy
Portfolio Standards Act

Pennsylvania Public Utility Commission

TYPE OF REGULATION

- Proposed Regulation
- Final Regulation with Notice of Proposed Rulemaking Omitted.
- Final Regulation
- 120-day Emergency Certification of the Attorney General
- 120-day Emergency Certification of the Governor

FILING OF REPORT

<u>Date</u>	<u>Signature</u>	<u>Designation</u>
<u>9/28/06</u>	<u>Linda Lasowyn</u>	<u>HOUSE COMMITTEE</u> Consumer Affairs
<u>9/28/06</u>	<u>May Walmer</u>	<u>SENATE COMMITTEE</u> Consumer Protection and Professional Licensure
<u>9/28/06</u>	<u>Kathy Cooper</u>	Independent Regulatory Review Commission
<u> </u>	<u> </u>	Attorney General
<u> </u>	<u> </u>	Legislative Reference Bureau

INDEPENDENT REGULATORY
REVIEW COMMISSION

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