

DRM 08-148

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THE STATE OF NEW HAMPSHIRE



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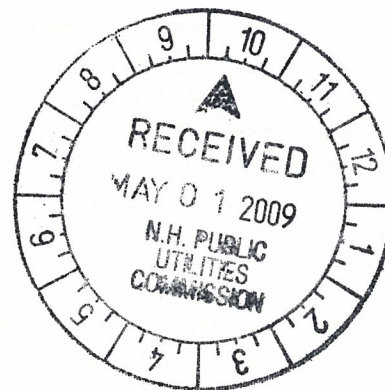
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May 1, 2009

Mr. Jeffry A. Pattison  
Office of Legislative Budget Assistant  
Room 102 State House  
Concord, New Hampshire 03301



Re: REQUEST FOR A FISCAL IMPACT STATEMENT  
Puc 900 – Net Metering for Customer-Owned Renewable Energy Generation Resources of  
100 Kilowatts or Less

Dear Mr. Pattison:

Attached you will find the Request for a Fiscal Impact Statement for Chapter Puc 900 rules titled, "Net Metering for Customer-Owned Renewable Energy Generation Resources of 100 Kilowatts or Less." A copy of the Commission-approved Initial Proposal for Puc 900 is attached for your review.

When you have completed your Fiscal Impact Statement, please notify the Commission. If you have any questions or comments, please contact me.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in cursive script that reads "Jennifer Ducharme".

Jennifer Ducharme  
Legal Assistant

Enclosures

# APPENDIX II-B

## OFFICE OF LEGISLATIVE BUDGET ASSISTANT REQUEST FOR FISCAL IMPACT STATEMENT (FIS)

FIS Number \_\_\_\_\_ Rule Number \_\_\_\_\_ **Puc 900**

<p>(2) Agency Name &amp; Address:</p> <p><b>Public Utilities Commission</b>  <b>21 S. Fruit Street, Suite 10</b>  <b>Concord, New Hampshire 03301</b></p>	<p>2. RSA Authority: <b>RSA 362-A:1,1-a, 9, V &amp; RSA 365:8, XII</b></p> <p>3. Federal Authority: _____</p> <p>4. Type of Action:</p> <p>Adoption _____</p> <p>Amendment _____</p> <p>Repeal _____</p> <p>Readoption _____</p> <p>Readoption <b>X</b></p> <p>w/amendment _____</p> <p>Interim rule <b>No</b></p>
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6. Short Title: **Puc 900 - NET METERING FOR CUSTOMER-OWNED RENEWABLE ENERGY GENERATION RESOURCES OF 100 KILOWATT OR LESS**

7. Contact Person:

Name: **Suzanne Amidon, Esq.**

Address: **21 South Fruit Street**  
**Suite 10**  
**Concord, NH 03301**

Title: **Staff Attorney**

Phone #: **603-271-6616**

Fax #: **603-271-3878**

**suzanne.amidon@puc.nh.gov**

**TTY/TDD Access: Relay NH**  
**1-800-735-2964 or dial 711 (in NH)**

### Remember:

- A copy of the proposed rule or an annotated copy of the amended rule must accompany this form. The annotated copy shall use [brackets] to indicate deleted material, and underlining for added material, or any other annotation style allowed in Section 5.4 in Chapter 4 of the Drafting and Procedure Manual for Administrative Rules.
- If calculations are required in the preparation of this request, attach a worksheet showing the methodology.
- This form may be replicated to expedite preparation.
- A transmittal memo shall accompany a request for a fiscal impact statement, noting the number of requests being sent and short titles.
- Please allow 10 working days from day of receipt for the Office of Legislative Budget Assistant to complete the fiscal impact statement. Additional information about this form is in Section 2.3 in Chapter 3 of the Drafting and Procedure Manual for Administrative Rules.

**REQUEST FOR FISCAL IMPACT STATEMENT (FIS) - Page 2**

(f) Please provide the following information and attach additional sheets if necessary:

(1) Summarize the rule.

**The changes to the proposed rule result from the passage of HB447 (2007) which modified the definition of eligible customer-generator and required the PUC to conform to certain safety standards when adopting its rules. The purpose of Puc 900 is to establish reasonable interconnection requirements for safety, reliability and power quality for customer owned renewable energy generation resources of 100 kilowatts or less (previously 25 kilowatts or less before HB447).**

**Specifically, the proposed rule sets forth definitions of terms, general rules, rights and obligations, statutory and other requirements, requirements relating to the interconnection application process, technical requirements for interconnection, description of separate compliance paths for units using inverters or meters to interface with the electrical grid and procedural requirements for all interconnected units.**

**Net energy metering is a way to provide a reasonable opportunity for small customers to choose interconnected self generation, to encourage private investment in renewable energy resources, to stimulate in-state commercialization of innovative and beneficial new technology, to enhance the future diversification of the state's energy resource mix, and reduce interconnection and administrative costs.**

(3) Is the cost associated with this rule mandated by the rule or by state statute? If the cost is mandated by statute, then the rule itself may not have a cost or benefit associated with it. Please state either the statute or the chapter law that is instigating this rule.

**Any costs associated with this rule result from 2007 revisions to RSA 362-A. There are no costs mandated by the rule.**

(4) Compare the cost of the proposed rule with the cost of the existing rule, if there is an existing rule.

**There are no costs to the state as a result of the proposed rule or existing rule.**

(5) Describe the costs and benefits to the state general fund which would result from this rule.

**There is no cost or benefit to the state general fund.**

(5) Explain and cite the federal mandate for the proposed rule, if there is such a mandate. How would the mandate affect state funds?

**There is no direct federal mandate.**

(6) Describe the cost and benefits to any state special fund which would result.

**There is no cost or benefit to any state special fund.**

(7) Describe the costs and benefits to the political subdivisions of the state.

**This rule is neutral as applied to political subdivisions of this state.**

(8) Describe the costs and benefits to the citizens of the state.

**There are no specific costs to citizens of the state.**

(9) Describe the costs and benefits to any independently owned business, including a description of the specific reporting and recordkeeping requirements upon those employing fewer than 10 employees.

**As the rules apply to electric distribution utilities, there are no costs to businesses employing fewer than 10 employees**

## CHAPTER 174

## HB 447 – FINAL VERSION

27Mar2007... 0258h

2007 SESSION

07-0386

06/03

HOUSE BILL **447**

AN ACT relative to net energy metering.

SPONSORS: Rep. Kaelin, Hills 4; Rep. C. Chase, Hills 2; Sen. Fuller Clark, Dist 24

COMMITTEE: Science, Technology and Energy

## AMENDED ANALYSIS

This bill:

I. Modifies the definition of eligible customer-generator.

II. Requires the public utilities commission to conform to certain standards when adopting safety rules.

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Explanation: Matter added to current law appears in ***bold italics***.Matter removed from current law appears [~~in brackets and struck through~~].

Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

27Mar2007... 0258h

07-0386

06/03

## STATE OF NEW HAMPSHIRE

*In the Year of Our Lord Two Thousand Seven*

AN ACT relative to net energy metering.

*Be it Enacted by the Senate and House of Representatives in General Court convened:*

174:1 Definitions. Amend RSA 362-A:1-a, II-b to read as follows:

II-b. "Eligible customer-generator" means an electric utility customer who owns and operates electrical generating facilities powered by [~~solar, wind, and/or hydro~~] ***renewable*** energy with a total peak generating capacity of not more than [~~25~~] ***100***

kilowatts that is located on the customer's premises, is interconnected and operates in parallel with the electric grid, and is intended primarily to offset part or all of the customer's own electricity requirements.

174:2 Net Energy Metering. Amend RSA 362-A:9, I to read as follows:

I. A standard contract or tariff providing for net energy metering shall be developed and made available to eligible customer-generators by each electric distribution utility within 90 days of the start of retail choice of electric suppliers, or within 90 days of the final approval of net metering regulations issued by the commission, whichever comes first. Such tariffs or contracts shall be available on a first-come, first-served basis within each electric utility service area under the jurisdiction of the commission until such time as the total rated generating capacity owned and operated by eligible customer-generators totals ~~[0.05]~~ **one** percent of the annual peak energy demand distributed by each such utility as determined by the commission from time to time.

174:3 New Energy Metering. Amend RSA 362-A:9, IV(c) to read as follows:

(c) Where the electricity generated by the customer-generator exceeds the electricity supplied by the electric grid, the customer-generator shall be credited ~~[during the next billing period]~~ **over subsequent billing periods** for the excess kilowatt hours generated in accordance with this section.

174:4 New Energy Metering. Amend RSA 362-A:9, V to read as follows:

V. The commission shall adopt rules, pursuant to RSA 541-A, to establish reasonable interconnection requirements for safety, reliability, and power quality as it determines the public interest requires. ***Such rules shall not exceed applicable test standards of the American National Standards Institute (ANSI) or Underwriters Laboratory (UL).***

174:5 Effective Date. This act shall take effect 60 days after its passage.

Approved: June 18, 2007

Effective: August 17, 2007



**Readopt with Amendment Chapter Puc 900, effective 1-12-09 (Document # 7424) to read as follows:**

CHAPTER Puc 900 NET METERING FOR CUSTOMER-OWNED RENEWABLE  
ENERGY GENERATION RESOURCES OF ~~25~~100 KILOWATT OR LESS

PART Puc 901 PURPOSE

Puc 901.01 Purpose. The purpose of Puc 900, pursuant to the mandate of RSA 362-A:9, is to establish reasonable interconnection requirements for safety, reliability and power quality for net energy metering as the public interest requires, and consistent with the legislative declaration of purpose set forth in RSA 362-A:1, in which the legislature found:

(a) It to be in the public interest to provide for small scale and diversified sources of supplemental electrical power to lessen the state's dependence upon other sources which may, from time to time, be uncertain;

(b) It to be in the public interest to encourage and support diversified electrical production that uses indigenous and renewable fuels and has beneficial impacts on the environment and public health; and

(c) That net energy metering for eligible customer-generators may be one way to provide a reasonable opportunity for small customers to choose interconnected self generation, encourage private investment in renewable energy resources, stimulate in-state commercialization of innovative and beneficial new technology, enhance the future diversification of the state's energy resource mix, and reduce interconnection and administrative costs.

PART Puc 902 DEFINITIONS

Puc 902.01 "Distribution utility" means the company that owns and/or operates the distribution facilities delivering electricity to the eligible customer-generator's premises.

Puc 902.02 "Electric utility customer" as used in the definition of "eligible customer-generator" means any residential, commercial or industrial ratepayer of a distribution utility.

Puc 902.03 "Electricity suppliers" means "electricity suppliers" as defined in RSA 374-F:2, II, namely "suppliers of electricity generation services and includes actual electricity generators and brokers, aggregators, and pools that arrange for the supply of electricity generation to meet retail customer demand, which may be municipal or county entities."

Puc 902.04 "Eligible customer-generator (~~ECG~~)"(~~"customer-generator"~~) means "~~eligible customer-generator~~" as defined in RSA 362-A:1, II-b, namely, "an electric utility customer who owns and operates electrical generating facilities powered by ~~solar, wind or hydro~~renewable energy with a total peak generating capacity of not more than ~~25~~100 kilowatts (kW) that is

located on the customer's premises, is interconnected and operates in parallel with the electric grid, and is intended primarily to offset part or all of the customer's own electricity requirements.<sup>22</sup>

Puc 902.05 "Generation capacity" means, for ~~solar-inverter based~~ units, the kilowatt rating of the ~~solar power array inverter~~, and for other ~~than solar units interconnections~~, the kilowatt rating of the generation unit.

Puc 902.06 "Islanding" means a condition in which a portion of the utility system that contains both load and dispersed generation is isolated from the remainder of the utility system.

Puc 902.07 "Net energy metering" means "net energy metering" as defined in RSA 362-A:1, III-a, namely, "measuring the difference between the electricity supplied over the electric distribution system and the electricity generated by an eligible customer-generator which is fed back into the electric distribution system over a billing period."

Puc 902.08 "Renewable energy" means electricity produced by renewable resources including geothermal, tidal or wave, wind, solar, landfill gas, hydro, biomass, bio-oil, bio-synthetic gas and biodiesel resources.

Puc 902.09 "Witness test" means the process used by the electric utility following the interconnection of a customer generation facility to determine whether the interconnection affects the safety, reliability or power quality of the distribution system.

## PART Puc 903 GENERAL RULES, RIGHTS AND OBLIGATIONS

### Puc 903.01 General Rules, Rights and Obligations.

(a) Any distribution utility and any electricity supplier operating within the state of New Hampshire shall, upon request, provide net energy metering to ~~ECGs-eligible customer generators~~ pursuant to Puc 900 and RSA 362-A:9.

(b) A distribution utility shall comply with Puc 900 in a non-discriminatory manner and shall not unreasonably withhold its permission to interconnect an ~~ECG's-eligible customer's~~ generating facility.

(c) Any electricity supplier operating within New Hampshire that is not the default service ~~or transition service~~ provider shall offer net metering pursuant to Puc 900 but may provide for rates and terms as provided in RSA 362-A:9, III and Puc 903.02~~(hi)~~.

(d) Any ~~ECG-customer-generator~~ who engages in net energy metering in New Hampshire shall comply with Puc 900.

~~(e) An ECG which owns multiple premises in New Hampshire may apply to and may site a net metered facility pursuant to Puc 900, at each such separate premises that it owns.~~

~~(fe)~~ An ECGa customer-generator shall comply with:

(1) Applicable commission-approved rules, tariffs and terms and conditions of the distribution utility not in conflict with Puc 900; and

(2) Any local, state or federal law, statute or regulation which applies to the design, siting, construction, installation, operation, or any other aspect of the ECG's customer's generating and interconnection facility.

~~(gf)~~ Interconnection with the distribution utility under Puc 900 shall not ~~provide authorize~~ an ECGa customer-generator any rights to utilize the distribution utility's electric distribution system for the transmission or distribution of electric power, ~~nor does it limit those rights.~~

~~(hg)~~ The distribution utility shall have the right to review the design of an ECG'sa customer's generating and interconnection system facility and to inspect ~~these such facilities facility~~ prior to the commencement of operation.

~~(he)~~ The distribution utility may require an ECGa customer-generator to make modifications to its facility as necessary to comply with the requirements of Puc 900.

~~(ji)~~ The distribution utility's review and authorization for operation shall not be construed as confirming or endorsing the ECG's customer-generator's design or as warranting the generating ~~and/or~~ interconnection facility's safety, durability or reliability.

~~(kj)~~ The distribution utility shall not, by reason of such review or lack of review, be responsible for the strength, adequacy, or capacity of such facility's equipment.

~~(lk)~~ An ECG'sa customer's generating and interconnection ~~facilities facilities~~ shall be reasonably accessible to the distribution utility personnel as necessary for the distribution utility to perform its duties and exercise its rights under its tariffs and terms and conditions filed with and approved by the commission, and Puc 900.

~~(ml)~~ Any information pertaining to generating ~~and/or~~ interconnection ~~facilities facility~~ provided to a distribution utility by an ECGa customer-generator shall be treated by the distribution utility in a confidential manner.

~~(mf)~~ An ECG shallA customer-generator shall operate and maintain its generating and interconnection ~~facilities facility~~ in a manner that is as safe, dependable and efficient as practicable.



Puc 903.02 Statutory and Other Requirements.

(a) Electric distribution utilities shall make net energy metering available to eligible customer-generators, pursuant to RSA 362-A:9 and Puc 900.

(b) Eligibility for net energy metering shall be available on a first-come, first-served basis within each distribution utility service area under the jurisdiction of the commission until such time as the total rated generating capacity owned and operated by ECGs-customer-generators totals 0.051.0 percent of the annual peak energy demand distributed by each such distribution utility as determined by the commission from time to time, pursuant to RSA 362-A:9.

(c) Net energy metering shall be accomplished using a single meter capable of registering the flow of electricity in two directions, pursuant to RSA 362-A:9.

(d) Notwithstanding (c) above, an additional meter or meters to monitor the flow of electricity in each direction may be installed, provided that it is not at the expense of the customer-generator unless requested by the customer-generator.

(e) If the output of the customer's facility will be measured for the purposes of recording renewable energy output under RSA 362-F:A, a second meter measuring the flow of electricity from the facility may be installed at the customer's expense.

~~(ef)~~ If an additional meter or meters are installed, as described in (d) above, the net energy metering calculation shall yield the same result as when a single meter is used, pursuant to RSA 362-A:9.

~~(fg)~~ The net energy metering calculation shall be made by taking the difference between the electricity supplied over the electric distribution system and the electricity generated by the ECG-customer-generator and fed back into the electric distribution system over the billing period, pursuant to RSA 362-A:9.

~~(gh)~~ Each electric distribution utility shall, pursuant to RSA 362-A:9, offer net energy metering to each ECG-customer-generator on terms which shall be identical, with respect to rates, rate structure, and periodic charges, to the contract or tariff to which the same customer would be assigned if such customer was not an ECGa customer-generator.

~~(hi)~~ Electricity suppliers may voluntarily determine the terms, conditions, and prices under which they will agree to provide generation supply to and purchase net generation output from ECGscustomer-generators, however, electricity suppliers who provide default energy service or transition service to such a customer shall only bill for the net energy supplied as calculated in accordance with ~~(gh)~~ above, pursuant to RSA 362-A:9.

~~(ij)~~ Pursuant to RSA 362-A:9, the following shall apply to net energy measurement:

(1) The net energy produced or consumed on a monthly basis shall be measured in accordance with normal metering practices;

(2) Where the electricity supplied to the customer-generator over the electric distribution system exceeds the electricity generated by the customer-generator during the billing period, the customer-generator shall be billed based on the net energy supplied for distribution services and other charges in accordance with this section and standard applicable rates; and

(3) Where the electricity generated by the customer-generator exceeds the electricity supplied by the electric grid, the customer-generator shall be credited ~~during the~~ nextover subsequent billing periods for the excess kilowatt hours generated in accordance with this section.

(~~jk~~) Upon exit from the net energy metering system, there shall be no payment or credit to ~~an ECGa~~ customer-generator for any remaining excess generation.

(~~lk~~) The commission shall waive any provision of Puc 900 ~~and/or~~ RSA 362-A after notice and an opportunity for a hearing, if it determines that waiver of the applicable statute or rule section is ~~part of a targeted~~ net energy metering arrangement that is part of a utility strategy to minimize distribution costs, pursuant to RSA 362-A:9.

(~~lm~~) The commission shall consider any request for a waiver, whether filed pursuant to (~~kl~~) above or otherwise, pursuant to Puc 201.05, titled waiver of rules.

## PART Puc 904 INTERCONNECTION APPLICATION PROCESS

### Puc 904.01 Pre-application Review.

(a) Before purchasing ~~and/or~~ installing net energy metering equipment, a customer may request that ~~his or her~~ the customer's distribution utility informally review the proposed project and provide information on:

(1) Whether the ~~applicant's-customer's~~ distribution utility is under the cap established by RSA 362-A:9,I;

(2) Whether the customer's generation ~~equipment-facility~~ and electric grid interface unit, in the opinion of the distribution utility, is likely to comply with the requirements of Puc 900; and

(3) Whether the customer is in an area or service ~~location~~ which is likely to require any upgrade or study.

(b) At the pre-application stage the distribution utility shall provide the customer its best evaluation, given the information it has available, but shall not be required to conduct a study or elaborate review of the project.

Puc 904.02 Interconnection Application.

(a) To initiate the process to engage in net energy metering, ~~an applicant~~ a customer shall file with its distribution utility and, if applicable, its electricity supplier, an interconnection application form.

(b) When filing a ~~an completed~~ application with the distribution utility, to obtain evidence of the filing and the date of filing, the applicant shall:

- (1) File the application by certified mail; or
- (2) Obtain a dated acknowledgment of receipt from the distribution utility; or
- (3) Obtain written or electronic verification of receipt from the distribution utility by other means consistent with (1) and (2) above.

(c) The interconnection application form shall include the following:

(1) Applicant information which shall include:

- a. The ~~applicant's customer's~~ name;
- b. The ~~applicant's customer's~~ full mailing address
- c. The facility location, if different from above;
- d. The ~~applicant's customer's~~ daytime and evening telephone number;
- e. The information provided in a., b., and d. above for an alternative contact person when the applicant customer is unavailable.;
- ~~ef.~~ The name of the local distribution utility and the ~~applicant's customer's~~ account number; and
- ~~fg.~~ If different than the distribution utility, the name of the ~~applicant's customer's~~ electricity supplier and the ~~applicant's customer's~~ account number;

(2) Generating facility information, ~~which shall include~~ including:

- a. The generator type, whether solar, wind ~~or~~ hydro or other renewable source as defined in RSA 362-F:4, I, (a) through (f) ;
- b. The generator manufacturer, model name and number;
- c. The number of phases of the unit, whether single or three phase;
- d. The power rating of the generation output of the system in kilowatts;
- e. If applicable, the inverter manufacturer, model name and number;
- f. Whether a battery backup will be used or not; and
- g. Whether an exterior manual disconnect switch for utility use shall be installed, if the generation output of the unit is less than or equal to 10 kilowatts in size; and

(3) Installation information and certification, which shall include:

- a. Whether the generator shall be owner installed;
- b. The installation date;
- c. The anticipated interconnection date;
- d. The name, complete address, telephone number and license number of the installing electrician, if applicable;
- e. The name and company affiliation of the vendor selling the generator to the ~~applicant~~customer;
- f. The signature, with the date of signature, of the vendor, certifying that the system hardware is in compliance with Puc 900;
- g. Certification, if applicable, that the system has been installed in compliance with the local municipal building ~~and/or~~and electrical code in the form of:
  - 1. A signed and dated certificate by the applicable local code official; or
  - 2. A copy of a signed and dated final inspection certificate from the municipality; and



h. A signed and dated certification by the applicant-customer that:

1. The applicant-customer has installed and shall operate the generation system in compliance with Puc 900;
2. The initial start-up test required by Puc 905.04 has been successfully completed; and
3. To the best of the applicant's-customer's knowledge, all of the information contained in the interconnection notice is true and correct; and

i. Responses to the questions posed in Puc 904.01.

(d) An applicant-customer may submit an interconnection application to its distribution utility when the applicant's-customer's system-facility has not been fully installed and tested, but shall:

- (1) Provide in writing in connection with the interconnection application a description of any manner in which the system-facility is not fully connected, tested or is not yet otherwise in compliance;
- (2) ~~Complete any such uncompleted~~ Fulfill any unmet requirements prior to interconnecting; and
- (3) Upon completion of unmet interconnection requirements, provide the distribution utility with any necessary updated written certifications required by this part.

~~(e) The distribution utility shall not interconnect the facility until all requirements pursuant to (d) above are met. If any requirements not completed as of the filing date of the interconnection application, as referred to in (d) above, necessitate further action by the distribution utility to verify compliance, the 30 day period prior to approval and operation referred to in Puc 904.04(a), shall be extended from the date such item(s) are completed, accordingly.~~

(f) Upon request, the distribution utility shall provide the applicant-customer written confirmation that the interconnection application has been received and the date of receipt as follows:

- (1) When the application is filed in person, immediately; or
- (2) When the application is filed by mail or other means, within 210 business days of receipt, with written acknowledgement that states that:

- a. The application is complete; or
- b. That the application is incomplete and what information is necessary to complete the requirements.

(g) When the distribution utility provides a receipt for an application it may clarify that the receipt acknowledges the date and fact of a filing, but not the approval of the filing.

(h) A sample interconnection application form is set forth in appendix II to Puc 900.

Puc 904.03 Mutual Indemnity Provision Agreement.

~~(a) — Unless both parties to the agreement have agreed, pursuant to (g) below, to not enter into or maintain the mutual indemnity agreement, prior to interconnection, the applicant/ECG, his or her distribution utility, and, if applicable, the customer's electricity supplier shall:~~

~~(1) — Execute the mutual indemnity agreement described in (b) below; and~~

~~(2) — Maintain the terms of the agreement while the net energy metered unit is interconnected.~~

~~(b) — With regard to the mutual indemnity agreement, each party to the agreement shall provide as follows:~~

~~(a)~~ Each party shall hold harmless, and indemnify the other party and its directors, officers, agents and employees against any and all loss, liability, damage, or expense, including any direct, indirect or consequential loss, liability, damage, or expense, but not including attorneys' fees unless awarded by a court of competent jurisdiction, for injury or death to persons, including employees of either party, and damage to property, including property of either party, arising out of or in connection with intentional, willful, wanton, reckless or negligent conduct regarding:

(1) The engineering, design, construction, maintenance, repair, operation, supervision, inspection, testing, protection or ownership of the party's facilities; or

(2) The making of replacements, additions, or improvements to, or reconstruction of, the party's facilities; ~~—, —~~

(b) Neither party shall be indemnified by ~~this provision~~ the agreement for any loss, liability, damage, or expense resulting from its sole negligence or willful misconduct; ~~and~~

~~(3c)~~ Notwithstanding ~~the this indemnity provision~~ provisions contained in the agreement, except for a party's willful misconduct or sole negligence, each party shall be responsible for damage to its own facilities resulting from electrical disturbances or faults.



~~(ied)~~ ~~The-This~~ mutual indemnity ~~provision~~ agreement shall become effective as between the respective parties ~~executing and exchanging the document,~~ upon interconnection of the ~~applicant/ECG to the electric grid and mutual execution and exchange of the document by the distribution utility, the ECG and, if applicable, the electricity supplier.~~

~~(d)~~—~~The distribution utility shall also execute the mutual indemnity agreement described in this section.~~

~~(e)~~—~~The applicant/ECG, distribution utility, and, if applicable, the electricity supplier, shall each execute duplicate originals of the mutual indemnity agreement set forth in (b) above and each party to the agreement shall retain one executed original of the agreement.~~

~~(f)~~—~~If an electricity supplier sells electric power to the ECG, it may require that the ECG enter into a mutual indemnity agreement with it, as described in this section.~~

~~(g)~~—~~Notwithstanding (e) through (f) above, the customer-applicant/ECG and the distribution utility with whom he or she interconnects and/or the electricity supplier and the applicant/ECG, separately or together, may at any time, by mutual agreement, elect not to enter into or to void the indemnity agreement set forth in (b) above.~~

~~(jhc)~~ The ~~provisions-terms~~ of the indemnity provision ~~agreement~~ described in this section shall not be construed to relieve any insurer of its obligations to pay any insurance claims in accordance with the provisions of any valid insurance policy.

Puc 904.04 Interconnection Process Application Completeness Review.

~~(a)~~ ~~(a)~~—~~Except as provided in (b) below, within 30 days of the filing of a completed interconnection application by the applicant, the distribution utility shall:~~

~~(1) Notify the applicant in writing that the applicant may interconnect with the electric grid and commence generation; or~~

~~(2) Provide the applicant in writing an itemization with description of the specific issue(s) which the utility regards place the net energy metered project not in compliance with Puc 900, RSA 362-A, or any other specific applicable regulatory requirement, including a reference to the regulatory requirement not met.~~

~~(b)~~—~~As to a generating facility that does not interface with the electric grid by means of an inverter, the distribution utility shall have a period of 75 days from the initial filing of the interconnection application to:~~

~~(1) Assess the proposed system and the applicant's site characteristics;~~

~~(2) Communicate with the applicant regarding adequate protective interface devices; and~~

~~(3) Allow the applicant to interconnect or provide the applicant specific written reasons for objecting to interconnection.~~

~~—— (c) If the applicant and the distribution utility agree that the application reasonably requires more time before the distribution utility responds as provided in (a) or (b) above, as applicable, they may agree to extend the deadline for response.~~

~~—— (d) Except as provided in (c) above, if the distribution utility is not able to respond to the applicant within the 30 day review period for inverter based systems or 75 day review period for non-inverter based systems and the applicant does not agree to an extension of the response time, the distribution utility shall:~~

~~(1) Notify the commission and the applicant in writing no later than the expiration of the relevant period;~~

~~(2) Petition the commission for an extension of a specified length; and~~

~~(3) Cite the specific reasons why the deadline was not met and the basis for the length of the requested extension.~~

~~—— (e) The commission shall grant an extension for review of the application for the shortest time reasonable, if any, if it determines that it is necessary to provide the distribution utility additional time to assess the effect of the proposal on safety and/or reliability or power quality of the electric distribution system in light of:~~

~~(1) The complexity of the characteristics of the site;~~

~~(2) The complexity of the proposed generation and interconnection facilities; and/or~~

~~(3) Delay occasioned by:~~

~~a. Failure of the applicant to timely provide the distribution utility information necessary to assess the potential impact of the system on safety, reliability or power quality of the electric grid;~~

~~b. Untimely response by the applicant to the distribution utility in response to a distribution utility request for information; or~~

~~c. Circumstances beyond the control of the distribution utility that prevent the utility from responding within the time limits established by this section.~~



~~—— (f) The distribution utility shall notify the applicant as soon as reasonably possible of any required information not included in the applicant's interconnection application filing, but not later than 30 days following filing of an application that the applicant indicates is complete.~~

~~—— (g) If the distribution utility has not met the applicable deadline for responding to a completed application pursuant to (a) or (b) above and has not petitioned for an extension pursuant to (d) and (e) above, the applicant may:~~

~~(1) Contact the distribution utility and commission and request resolution; and/or~~

~~(2) File a complaint with the commission.~~

~~—— (h) Prior to operation, during normal business hours, the applicant shall:~~

~~(1) Provide the distribution utility the opportunity to inspect the unit; and~~

~~(2) Upon request, demonstrate to the distribution utility the operation of the unit.~~

~~—— (i) The distribution utility shall interconnect with any ECG which:~~

~~(1) Receives electric service from the distribution utility;~~

~~(2) Has completed the application process required by this section; and~~

~~(3) Has installed a net energy metering system that complies with the interconnection and technical specification requirements of Pue 900.~~

~~—— (j) Facilities that meet the interconnection requirements of Pue 900 shall not be required by the distribution utility to meet additional requirements, perform or pay for additional tests, or pay additional interconnection-related charges, unless as otherwise provided.~~

~~—— (k) Nothing in (j) above shall prohibit a party from petitioning the commission, pursuant to Pue 201.05, as to any net energy metered facility, to require additional interconnection requirements, performance of or payment for additional tests, or payment of additional interconnection-related charges.~~

~~—— (l) A net metered customer, a distribution company or an electricity supplier may install additional controls or meters or conduct additional tests, beyond those required by Pue 900, but if entry to the applicant/ECG's premises is necessary, shall first obtain consent to access the premises pursuant to Pue 908.03.~~

~~—— (m) The expenses associated with the additional tests, meters, and/or equipment described~~

in (l) above shall be borne by the party desiring the additional tests, meters and/or equipment.

The interconnection process begins when the eligible customer generator submits a complete application pursuant to this part.

(b) The distribution utility shall evaluate the application for completeness and notify the customer in writing within 10 business days of the application's receipt whether the application is or is not complete and, if the application is not complete, inform the customer in writing what information is missing.

(c) The distribution utility shall verify that the customer's facility equipment passes the requirements of Puc 905.

(d) If the distribution utility approves the application, the distribution utility shall sign the application and return the approved application to the customer.

(e) If the distribution utility determines that interconnection of the customer generation facility would jeopardize the safety, reliability or power quality of the local distribution system, the distribution utility shall require the customer to pay for necessary modifications to the distribution system before the application is approved.

(f) In the event that the distribution utility requires the customer to pay for system modifications pursuant to (e) above, the distribution utility shall provide the customer a description of work and an estimate of the cost for approval.

(g) If the customer agrees to pay for the system modifications, the customer shall sign the description of the work and submit a signed copy and the payment of the estimated costs to the distribution utility.

(h) Upon receipt of the customer's approval and payment, the distribution utility shall perform the system modifications.

(i) Upon completion of the system modifications, the distribution utility shall sign the application approval and provide a copy of the signed approval to the customer.

#### Puc 904 05. Installation and Interconnection of Facility

(a) Upon receipt of an application signed by the distribution utility, the customer may install the generating facility.

(b) Following installation of the facility, the customer shall arrange for inspection of the completed installation by the local building inspector or, if one is not available, a New Hampshire licensed electrician.



(c) The person who inspects the installation pursuant to (b) above shall sign a certificate of completion.

(d) If the facility was installed by an electrical contractor, the customer shall also have the contractor complete a certificate of completion.

(e) When the customer has the signatures pursuant to (c) and (d) above, the customer shall provide the distribution utility with a copy of the certificates of completion.

(f) Following receipt of the certificate(s) of completion, the distribution utility may inspect the customer's facility for compliance with standards by arranging for a witness test. -

(g) Until a witness test has been performed, the customer shall have no right to operate in parallel unless a witness test has been previously waived by the distribution utility on the application form. -

(h) If the distribution utility elects to conduct a witness test, the distribution utility will attempt to conduct it within 10 business days of the receipt of the certificate of completion.

(i) All projects larger than 10 kW shall be subject to a witness test; unless the distribution utility has waived the witness test on the application form.

(j) If the witness test shows that the facility is appropriately installed and functioning without jeopardizing the safety, reliability or power quality of the distribution system, the distribution utility shall notify the customer in writing that the interconnection is authorized.

(k) If the witness test results indicate that the facility installation jeopardizes the safety, reliability or power quality of the distribution system, the distribution utility shall disconnect the facility provided that the distribution utility inform the customer in writing what actions are required to mitigate the safety, reliability or power quality issues along approval of the facility interconnection.

(l) If the customer does not substantially complete construction within 12 months after receiving application approval from the distribution utility, the distribution utility shall require the customer to reapply for interconnection.

(m) ~~(b)~~ As to a generating facility up to 25 kW that does not interface with the electric grid by means of an inverter, the distribution utility shall have a period of 75 days from the initial filing of the interconnection application to:

- (1) Assess the proposed system and the ~~applicant's~~ customer's site characteristics;
- (2) Communicate with the ~~applicant~~ customer regarding adequate protective interface

devices; and

(3) Allow the applicant to interconnect or provide the applicant-customer specific written reasons for objecting to interconnection.

~~(nlen)~~ If the applicant-customer and the distribution utility agree that the application reasonably requires more time before the distribution utility responds as provided in ~~(a)~~ or (b)(m) above, as applicable, they may agree to extend the deadline for response.

~~(omdo)~~ Except as provided in ~~(en)~~ above, if the distribution utility is not able to respond to the applicant within the ~~30-10~~ day review period for inverter based systems or 75 day review period for non-inverter based systems and the applicant-customer does not agree to an extension of the response time, the distribution utility shall:

(1) Notify the commission and the applicant-customer in writing no later than the expiration of the relevant period;

(2) Petition the commission for an extension of a specified length; and

(3) Cite the specific reasons why the deadline was not met and the basis for the length of the requested extension.

~~(pnep)~~ The commission shall grant an extension for review of the application for the shortest time reasonable, if any, if it determines that it is necessary to provide the distribution utility additional time to assess the effect of the proposal on safety, ~~and/or~~ reliability or power quality of the electric distribution system in light of:

(1) The complexity of the characteristics of the site;

(2) The complexity of the proposed generation and interconnection facilities; ~~and/or~~

(3) Delay occasioned by:

a. Failure of the applicant-customer to timely provide the distribution utility information necessary to assess the potential impact of the system on safety, reliability or power quality of the electric grid;

b. Untimely response by the applicant-customer to the distribution utility in response to a distribution utility request for information; or

c. Circumstances beyond the control of the distribution utility that prevent the utility from responding within the time limits established by this section.



(~~qefq~~) The distribution utility shall notify the ~~applicant-customer~~ as soon as reasonably possible of any required information not included in the ~~applicant's-customer's~~ interconnection application filing, but not later than 30 days following filing of an application that the ~~applicant-customer~~ indicates is complete.

(~~rper~~) If the distribution utility has not met the applicable deadline for responding to a completed application pursuant to (~~a~~) or (~~b~~)(~~m~~) above and has not petitioned for an extension pursuant to (~~do~~) and (~~ep~~) above, the ~~applicant-customer~~ may:

- (1) Contact the distribution utility and commission and request resolution; ~~and/or~~
- (2) File a complaint with the commission.

(~~sqhs~~) Prior to operation, during normal business hours, the ~~applicant-customer~~ shall:

- (1) Provide the distribution utility the opportunity to inspect the unit; and
- (2) Upon request, demonstrate to the distribution utility the operation of the unit.

(~~trit~~) The distribution utility shall interconnect with any ~~ECG-customer-generator~~ which:

- (1) Receives electric service from the distribution utility;
- (2) Has completed the application process required by this section; and
- (3) Has installed a net energy metering system that complies with the interconnection and technical specification requirements of Puc 900.

(~~usju~~) Facilities that meet the interconnection requirements of Puc 900 shall not be required by the distribution utility to meet additional requirements, perform or pay for additional tests, or pay additional interconnection-related charges, unless as otherwise provided.

(~~vtkv~~) Nothing in (~~ju~~) above shall prohibit a party from petitioning the commission, pursuant to Puc 201.05, as to any net energy metered facility, to require additional interconnection requirements, performance of or payment for additional tests, or payment of additional interconnection-related charges.

(~~wulw~~) A net metered customer, a distribution company or an electricity supplier may install additional controls or meters or conduct additional tests, beyond those required by Puc 900, but if entry to the ~~applicant/ECG's-customer-generator's~~ premises is necessary, shall first obtain consent to access the premises pursuant to Puc 908.03.

(~~xvmx~~) The expenses associated with the additional tests, meters, and/or equipment

described in (l) above shall be borne by the party desiring the additional tests, meters and/or equipment.

(y) For facilities larger than 25 kW, the distribution utility shall require a site specific interconnection review that may require additional protective equipment and may exceed the 75 day time frame.

Puc 904.056 — Upgrades or Changes in the Net Metering System.

(a) The ~~ECG-customer-generator~~ shall provide the distribution utility with a written update of any of the information required to be provided on the interconnection application as any changes occur.

(b) The ~~ECG-customer-generator~~ shall re-certify to ~~his or her~~their distribution utility the applicable certifications required by Puc 904.0205(c) and (d), when any of the following occurs:

- (1) The generation capacity is increased or its source is changed;
- (2) Any key component of the system, such as the inverter, is replaced or upgraded; or
- (3) The relays for a non-inverter system, are replaced, rewired or upgraded.

Puc 904.0607 Insurance

(a) The ~~ECG-customer-generator~~ shall not be required by the distribution utility or electricity supplier to purchase or maintain property insurance ~~and/or~~ comprehensive personal liability insurance to protect against potential liability resulting from the installation, operation ~~and/or~~ ownership of the generation and interconnection facility.

PART Puc 905 TECHNICAL REQUIREMENTS FOR INTERCONNECTION FOR ~~ALL-~~  
UNITS/FACILITIES

Puc 905.01 ~~Units-Facilities~~ 100 kW or Less May Opt for No Disconnect Switch.

(a) ~~Except as provided in Puc 905.02, each unit No facility with a generation output rating of 10 kilowatts or less shall not~~ be required to install and maintain a manual disconnect switch for utility use.

(b) If the distribution utility finds it necessary for scheduled maintenance of which the ~~ECG-~~customer-generator has received reasonable notice or in an emergency situation, to disconnect from the electric grid ~~an ECGa customer-generator~~ who does not maintain a manual disconnect switch for utility use, the utility may do so by:

- (1) Pulling the customer's meter;
- (2) Disconnecting the customer's service at the site transformer; or
- (3) Executing any other reasonable method of disconnection.

(c) If the ECG-customer-generator has been notified of a scheduled maintenance or other event requiring disrupting generation or service, as an alternative to having his or her service disconnected, and upon agreement of the distribution utility, the ECG-customer-generator or their representative may be present at the scheduled time of disruption of service and demonstrate to the utility representative that generation has been isolated from the utility grid and remains isolated for the duration of the required period.

(d) If the ECG-customer-generator schedules a meeting with the distribution utility for disconnection of the system, as described in (c) above, and the ECG-customer-generator does not meet at the scheduled time, the distribution utility may disconnect the service as provided in (b) above.

(e) If the ECG-customer-generator does not install a manual disconnect device accessible to the utility, the ECG-customer-generator:

- (1) Shall assume all risks and consequences associated with the loss of power to the ECG's-customer's premises during any period when the distribution utility is required to disconnect the customers electric service ~~of the ECG~~; and
- (2) Acknowledges that the service disconnection shall interrupt all electric service to the ECG-customer-generator site.

(f) Any ECG-customer-generator may agree to install a manual disconnect device accessible to the distribution utility.

(g) If the ECG-customer-generator elects not to install a disconnect switch for use by the distribution utility, ~~he or she~~ the customer-generator shall install a warning label, to be provided by their distribution utility, on or near their service meter location.

Puc 905.02 Disconnect Switch.

~~(a) Any net-metered facility shall install and maintain a manual disconnect switch accessible to and for the use of the distribution utility if:~~

~~(1) The facility is larger than 10 kW in cumulative generation capacity; or~~



~~(2) The facility is on a service that is metered utilizing instrument transformers.~~

(ba) ~~Any generating~~A unit facility that is required~~that elects~~ to install a manual disconnect switch for utility use shall meet the following requirements:

(1) The disconnect switch shall be an external, manual, visible, gang-operated, load break disconnecting switch;

(2) The ~~ECG-customer-generator~~ shall purchase, install, own, and maintain the disconnect switch;

(3) The disconnect switch shall be located between the power producing equipment and its interconnection point with the distribution utility system;

(4) The disconnect switch shall meet applicable standards established by Underwriters Laboratories, American National Standards Institute, the National Electrical Code and Institute of Electrical and Electronic Engineers;

(5) The disconnect switch shall be clearly marked, "Generator Disconnect Switch", with permanent letters 3/8 inch or larger;

(6) The disconnect switch shall be located at a location on the property of the ~~ECG-customer-generator~~ mutually agreeable to the ~~ECG-customer-generator~~ and the distribution utility;

(7) The disconnect switch shall be readily accessible for operation and locking by distribution utility personnel; and

(8) The disconnect switch must be lockable in the open position with a standard padlock with a 3/8 inch shank.

(eb) ~~For purposes of this section, A-a~~ "gang operated" switch, ~~for purposes of this section,~~ means a switch in which the separate switches for each phase are operated as a group from a single control.

Puc 905.03 Configuration of the Transformer Serving the Customer's Generation Site.

(a) The existing site transformer serving the ~~ECG-customer-generator~~ load may be used if its use will not significantly degrade the power quality or voltage regulation on the secondary distribution system and if such usage will not create problems for distribution utility system relaying.

(b) For single phase distributed generators connected to 4-wire multi-grounded neutral



systems, the high side of the step-up transformer shall be connected phase to neutral.

(c) A phase to phase high side connection shall be allowed if it does not degrade power quality or voltage regulation on the distribution system.

(d) For single phase distributed generators connected to three wire or four wire impedance grounded systems, the step-up transformer high-side winding shall be connected phase to phase.

(e) For 3 phase distributed generators connected to 4-wire multi-grounded distribution systems, the step-up transformer may be an existing grounded-wye to grounded-wye transformer.

(f) In cases as described in the paragraph above, the generator shall be impedance grounded as necessary to achieve effective grounding but limit the desensitization of the distribution utility system ground fault relaying.

(g) The generation system site shall be impedance grounded, as described in (f) above, if necessary, in a manner adequate to assure that the unit does not:

(1) Significantly degrade the power quality or voltage regulation on the distribution system;

(2) Create significant safety problems; or

(3) Create problems for distribution utility system relaying.

(h) To guard against over voltages on the unfaulted phases of a three-phase utility primary, if the transformer serving the ~~ECG-customer-generator~~ site is ungrounded, over voltage protection shall be used which is designed to detect a situation where the utility has tripped due to a phase to ground fault, and the connected ungrounded generator may not yet have tripped, and to trip the generator at high speed.

(i) "Wye" as used in this section, means the configuration in which one end of each transformer winding is connected to a common point and the other to its appropriate line terminal, resembling the letter "Y".

(j) The cost of any improvements necessary to the site transformer serving the net metered facility shall be borne according to the distribution utility's approved tariff on file with the commission.

#### Puc 905.04 Initial Testing.

(a) After installation of the ~~system-generation facility~~ and before final approval and interconnection to the electric grid, the ~~ECG-customer~~ shall, in addition to the certifications

required in connection with the interconnection application, conduct a load-break test on the generator, as described in (b) below, to confirm that the anti-islanding controls are functioning.

(b) When conducting a load-break test, the ECG-customer shall demonstrate that after the main disconnect switch or circuit breaker of the residence or building is opened, the generation unit shuts down within 2 seconds.

(c) If the generation unit fails to shut down within 2 seconds after conducting the test as provided in (b) above, the ECG-customer shall inform its distribution utility.

(d) The ECG-customer shall provide an initial test on a non-inverter interfaced system, by demonstrating that:

(1) The relays function as designed;

(2) The relays have been calibrated to settings as provided by the distribution utility pursuant to Puc 907.01(gf);

(3) All key components of the system function as designed; and

(4) The anti-islanding function of the unit works properly.

(e) The testing of the relays of a non-inverter interfaced system shall be conducted by an individual that:

(1) Utilizes test equipment:

a. Necessary to adequately test the key components of the system;

b. That is calibrated within tolerances sufficient to assure accurate testing; and

c. That is calibrated with a frequency consistent with industry standards;

(2) Has received the education and training necessary to conduct the sophisticated testing of relays and other components of a non-inverter based generator; and

(3) Maintains any professional accreditation or certification necessary for the testing of this nature.

(f) The individual conducting the testing of a non-inverter based system required by this section shall, upon request, provide the distribution utility information on his or her background and credentials, and equipment, ~~and~~ maintenance and calibration of the equipment sufficient to allow the utility to assess their-the individual's competence to undertake the required testing.

(g) Upon request, the ~~ECG customer~~ shall allow the distribution utility to have a representative present for the initial or periodic testing required by this part.

Puc 905.05 Periodic Testing.

(a) As to a generator facility which interfaces with the electric grid by an inverter, the ECG shall, if requested to do so by its distribution utility, conduct a load-break test, as described in Puc 905.04(b), once per year after installation.

(b) As to a generator that interfaces with the electric grid by a non-inverter, the ECG shall:

(1) Conduct a load-break test, as described in Puc 905.04, once per year after installation; and

(2) Verify the proper calibration and protective function of the components and systems of the generation unit, which shall include the testing prescribed by the unit manufacturer;

a. Once every 4 years or according to the schedule recommended by the manufacturer, whichever is ~~shorter~~ more frequent, for facilities rated greater than 25 kW; or

b. Once every 4 years for facilities rated 25 kW or less.

(c) The testing of the calibration and protective function of the components and systems of a non-inverter interfaced system shall be conducted by an entity qualified as provided in Puc 905.04(e) and (f).

(d) The ~~ECG customer~~-generator shall:

(1) Create a written record of the dates and procedures for tests conducted pursuant to this section; and

(2) Maintain the written record of verification testing for inspection by the distribution utility for a period of 4 years from the date of the respective test.

Puc 905.06 Studies and Analysis.

(a) A distribution utility may conduct detailed load flow, voltage regulation, or short circuit coordination studies of the primary feeder if it determines that the addition of a net metered generation unit will push the aggregate capacity of distributed generation on the feeder to the threshold level, described in (b) and (c) below.



(b) The distribution utility may deem the threshold of concern for aggregate distributed generation as reached if:

- (1) The lower of ~~107.5~~ % of the peak feeder demand as measured at the substation or 20% of the peak feeder demand downstream of the point of interconnection is reached;
- (2) More than one net metered unit is proposed to be installed on the same secondary shared by many customers; or
- (3) Any other reasonable means, consistent with (1) or (2) above, of determining that a study is necessary.

(c) The distribution utility shall deem the threshold of concern for aggregate distributed generation as reached if it determines that the addition of the proposed generation unit poses a reasonable threat to the continued safety, reliability or power quality to any significant portion of the electric grid.

(d) The distribution utility shall absorb the cost within its rate base for any studies or analyses which it deems necessary to evaluate a proposed net energy metered system and/or the electric grid relative to such a system.

#### Puc 905.07 Payment for Upgrades or Improvements to the Electric Grid.

(a) If an upgrade or an improvement to the electric grid up to the customer's meter is necessary for the distribution utility to interconnect to the ECG's net energy metered system, the expense shall be borne according to the utility's approved tariff on file with the commission.

### PART Puc 906 COMPLIANCE PATH FOR INVERTER UNITS

#### Puc 906.01 Inverter Requirements.

(a) A net energy metered project which connects to the electric grid by means of a single-phase or three-phase inverter shall be deemed to be compliant with the technical specifications for the generation unit itself, as established by Puc 900, if the unit complies with the minimum requirements set forth in the following national standards:

- (1) The "IEEE Recommended Practice for Utility Interconnections ANSI/IEEE STD 1547 Interface of Residential and Intermediate Photovoltaic (PV) Systems, ANSI/IEEE STD 929-2000" issued by the Institute of Electrical and Electronic Engineers, Inc., Piscataway, New Jersey, May, 2000; and

(2) The "UL 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems", issued by Underwriters Laboratories, Inc., of 333 Pfingsten Road, Northbrook, Illinois 60062, May, ~~1999~~2007; and

~~(3) The surge testing requirements, specified in (b) below.~~

~~(b) The surge testing standard referred to in (a)(3) above that shall be applicable to inverter interfaced systems, as follows:~~

~~(1) Location category B;~~

~~(2) Exposure level, medium;~~

~~(3) Test waveforms, 100 kHz ring wave, peak amplitude 4kV and 0.33kA;~~

~~(4) Test waveforms, combination wave, peak amplitude 4kV and 2 kA;~~

~~(5) Coupling modes shall be line to neutral, and line and neutral to ground;~~

~~(6) Test modes shall be as follows:~~

~~a. In mode one, the unit connected, delivers rated output power;~~

~~b. In mode two, the unit connected, delivers zero output power;~~

~~(7) Repetition, three applications of each surge condition with one minute between surges and both polarities tested for the combination wave;~~

~~(8) Pass criteria shall conform to the following:~~

~~a. Test mode one, in which:~~

~~1. The unit continues to run normally with no alteration in running or protection function;~~

~~2. The unit shuts down but can restart and run normally with no alteration in running or protection function; or~~

~~3. The unit cannot restart; and~~

~~b. Test mode two, in which:~~

~~1. The unit can start and run normally with no alteration in running or protection function; or~~

~~2. The unit cannot start.~~

(b) A net metered system shall be installed in accordance with the National Electrical Code, ~~1999~~2008, issued by the National Fire Protection Association, Quincy, Massachusetts;

~~(d) ECGs and manufactures of inverters shall be allowed a 9 month grace period from enforcement of the surge protection requirements of Pue 906.01(b) as provided in Pue 908.09.~~

## PART Puc 907 COMPLIANCE PATH FOR GENERATION UNITS NOT USING AN INVERTER

### Puc 907.01 Interconnection Requirements.

(a) Except as provided in (b) below, any net energy metered generation system which interfaces with the electric grid by means other than an inverter shall:

(1) Meet the following safety and service quality requirements:

a. The system shall not compromise the safety of the distribution utility personnel, the ECG or other customers on the electric grid;

b. The system shall have:

1. Adequate non-islanding protection;

4. Utility-grade protective devices to separate the facility from the electric distribution system, including:

(i) Time over-frequency protection;

(ii) Time under-frequency protection;

(iii) Time over-voltage protection; and

(iv) Time under-voltage protection;

5. Protection devices at the primary voltage level for ground fault and ground current contribution;



6. Adequate short circuit interrupting devices; ~~and~~

7. Reliable power sources for shunt-tripped short circuit interrupting devices; and

c. The generation facility shall not reduce the quality of service on the electric distribution system, including voltage fluctuations, excessive voltage and current harmonic content; ~~and~~

~~d. Facilities greater than 35 kW certify that they are in compliance with IEEE Standard 1547 for harmonics;~~

(2) Interface with the electric distribution system according to the following requirements:

a. The system shall synchronize with the primary voltage level on the distribution grid;

b. The transformer winding connection to be used at the primary voltage interconnecting point shall be adequate to coordinate with the distribution grid;

c. The generation facility shall synchronize with the electric grid; and

d. The generation facility shall correct the power factor, if necessary;

(3) Not impair the quality of service standards maintained by the electric distribution system;

(4) Provide other protections and devices necessary, consistent with the requirements of this section, to assure safety, quality of service, reliability and power quality of the electric distribution system; and

(5) As to relays, use utility grade relays.

(b) A non-inverter based system shall be installed in accordance with the National Electrical Code, ~~1999~~2008, issued by the National Fire Protection Association, Quincy, Massachusetts.

~~(e) — A non inverter interfacing generation system which is not configured according to each of the specific requirements of (a) above shall be acceptable, provided the system will not significantly negatively impact safety, quality of service, reliability and power quality of the electric distribution system.~~

(c) When seeking to interconnect with the distribution utility, the applicant shall provide

the distribution utility the following:

- (1) The interconnection application form required by Puc 904.02;
- (2) Alternating current (AC) and direct current (DC) elementary and schematic diagrams describing the planned protection package; and
- (3) A one-line diagram of the net energy metering system showing how the system protection shall be wired.

(d) The ECG-customer-generator shall provide for testing of the relays of the net energy metering system once the settings have been applied to confirm that they perform the intended function.

(e) As to the testing of relays described in (ed) above:

(1) The testing shall be conducted by a individual qualified for testing as described in Puc 905.04(e) and (f); and

(2) The ECG-customer shall provide the distribution utility the opportunity to:

- a. Be present at and observe the testing; or
- b. Conduct the testing of the relays by a qualified utility representative.

(f) If the ECGcustomer and the electric distribution utility cannot agree to the interconnection requirements, they shall file with the commission for review and determination.

(g) In determining interconnection requirements for a non-inverter system, the commission shall consider safety, reliability and power quality in the context of the legislative intent of RSA 362-A:9.

#### PART Puc 908 PROCEDURAL REQUIREMENTS FOR INTERCONNECTED UNITS

##### Puc 908.01 Emergencies, Maintenance.

(a) The ECG-customer-generator shall, during the period it operates as an-ECGa customer generator, provide the distribution utility a current telephone number(s).

(b) The distribution utility shall make arrangements for routine utility repairs or inspections that may involve the net energy metered system during normal business hours.

(c) The ECG-customer-generator shall not supply power to the electric distribution grid

during any outages of the distribution system that serves the ECGcustomer-generator.

(d) The ECG's-customer's generation-generating facility may be operated during outages referred to in (b) above only with an open tie to the distribution utility.

(e) The ECG-customer's generating facility shall not:

- (1) Create an islanding situation on the grid; or
- (2) Energize a de-energized utility circuit for any reason.

Puc 908.02 Procedures for Disconnection.

(a) When an emergency condition, described in (b) below, exists and when it is necessary under the circumstances to do so, the distribution utility may disconnect the ECG's-customer's net energy metered system and electric service.

(b) An emergency condition shall have occurred when the interconnection represents a condition which:

- (1) Is likely to result in imminent significant disruption of service to the distribution utility's customers;
- (2) Is imminently likely to endanger life or property;
- (3) Constitutes emergency or pre-emergency conditions on the utility system;
- (4) Constitutes a hazardous condition; or
- (5) Reveals that a protective device tampering has occurred on the ECG's-customer's generation facilitysystem.

(c) The distribution utility may open the disconnect switch or disconnect the ECG's-customer-generator's service, as applicable, after notice to the ECG-customer-generator has been delivered and a reasonable time to correct the condition, consistent with the conditions, has elapsed, if :

- (1) The ECG-customer-generator has failed to make available records of required verification tests and, in the case of a non-inverter interfaced system, maintenance of its protective devices;
- (2) The ECG's-customer's generation facilitysystem:



- a. Impedes the normal use of distribution utility equipment or equipment belonging to other distribution utility customers in a negative manner; or
- b. Impedes the normal quality of service of adjoining customers in a negative manner; or

(3) Has been modified so that it is not in compliance with Puc 900.

(d) When the ECG-customer-generator has corrected the problem and restored the system to compliance with Puc 900 and notifies the distribution utility of such compliance, the utility shall:

(1) Within 2 business days:

- a. Provide written verification to the ECG-customer of their compliance; or
- b. Provide written notice to the customer of the specifics of their continued non-compliance; and

(2) When the system is in compliance, reconnect or allow re-connection as soon as possible under the circumstances.

(e) The ECG-customer-generator may reconnect to the electric grid in coordination with the distribution utility, upon receipt of verification as provided in (d) above if the ECG, upon distribution utility request or otherwise, disconnected itself from the grid.

(f) If the distribution utility disconnects the ECG's-customer's net metering system for one of the emergency conditions referred to in (a) above, it shall notify the ECG-customer of the disconnection:

(1) Within 24 hours of the disconnection; or

(2) As soon as possible in circumstances where a widespread emergency or other significant extenuating circumstances preclude utility personnel contacting the customer within the 24 hour period.

(g) If the emergency referred to in (a) above was not caused by the net metered system, then the distribution utility shall reconnect the system upon cessation of the emergency.

(h) Notwithstanding any special notification and re-connection requirements for ECGs-customer-generators established by Puc 908, the distribution utility shall not be required to provide for special notification or re-connection for an-ECGa customer-generator that differs from its usual and regular policies and protocol in a disconnection situation, if:

(1) The disconnection is not for reasons associated with the net metered system; and

(2) The distribution utility does not open the ~~ECG's customer's~~ disconnect switch or pull the ~~ECG's customer's~~ meter.

(i) If the emergency referred to in (a) above was caused by the net metered system, then the distribution utility shall communicate the nature of the problem to the ~~system owner~~~~customer-generator~~ within 5 days, and attempt to resolve the issue with the ~~ECG~~~~customer~~.

(j) Within 30 days of the disconnection referred to in (h) above, the distribution utility shall file a disconnection petition with the commission if the distribution utility and the ~~ECG~~~~customer-generator~~ have not reached a mutually agreed-upon resolution.

(k) Non-emergency disconnections of the net metered system by a distribution utility shall follow the same process as emergency disconnections of such systems, except that the utility shall:

(1) Give the ~~ECG~~~~customer-generator~~ no less than 5 working days' prior notice of the disconnection; and

(2) Communicate in the notice to the ~~ECG~~~~customer-generator~~ the reasons for the disconnection.

(l) If the net metered system is not the reason for the disconnection, the distribution utility shall reconnect the system as soon as the activity, such as line maintenance, necessitating the disconnection, ceases.

(m) ~~When a utility disconnects the metering system of a customer-generator, the customer-generator~~ ~~An ECG who has had his or her net metering system disconnected~~ may file a complaint with the commission at any time after disconnection.

(n) If a disconnection complaint is filed with the commission it shall hold a hearing on the matter within 30 days and rule on whether the net metering system has violated a condition necessary for it to operate.

(o) In any hearing as referred to in (m) above, the disconnecting utility shall carry the burden of proof.

(p) ~~An ECG~~ ~~A customer-generator~~ shall not re-close a disconnect device which has been opened and tagged by its distribution utility or attempt to re-install a pulled meter without the prior permission of the distribution utility, or in the event of a dispute, the commission.

(q) ~~The ECG~~ ~~A customer-generator~~ shall be allowed to disconnect the net energy metered generation from the distribution utility without prior notice in order to self-generate but shall

notify the distribution utility as soon as practical following disconnection.

Puc 908.03 Distribution Utility Access to Net Metered System.

(a) The distribution utility may inspect the net energy metered system at its own expense at a time mutually agreeable to the customer upon reasonable notice to the eligible owner-generator.

(b) Except in emergency circumstances, the distribution utility shall provide not less than 5 business days notice to the customer-generator to enter the ECG's customer-generator's property to inspect the net metered system, install additional controls or meters or conduct additional tests.

(c) An ECGA customer-generator shall not withhold allowing access to the distribution utility to inspect the net metered system, install additional controls or meters or conduct additional tests.

Puc 908.04 Complaints and Investigations.

(a) The procedures set forth in Puc 200 shall be applicable to filing and resolution of any complaint and investigation arising out of Puc 900.

(b) Any party may file with the commission a complaint or request for resolution of a dispute relating to Puc 900.

Puc 908.05 Notifying Public of Net Energy Metering.

(a) When a customer initiates an inquiry and requests information on net energy metering, the distribution utility shall provide a copy of Puc 900 to the customer and the name and telephone number of a contact person(s) at the utility and a description of net energy metering.

(b) The distribution utility shall provide to each customer in a billing insert or a billing message in the customer bill stating a brief description of the availability of net energy metering of one paragraph or more in length.

(c) The distribution utility shall provide the information described in (b) above at annual intervals ~~of:~~

~~(1) Once each 6 months for the first year following the initial adoption of Puc 900; and~~

~~(2) Annually thereafter.~~

Puc 908.06 Violations of Authorization to Interconnect.



(a) After notice and an opportunity for a hearing, the commission shall revoke, suspend, or condition the authorization for an ECGa customer to interconnect a net energy metered system, or take such other action consistent with the above that it deems provident if it finds good cause.

(b) Good cause, as referred to in (a) above shall exist if the commission finds one or more of the following:

(1) The ECG-customer was granted authority to operate based on false or misleading information supplied by the applicant which:

a. Is material; and

b. The applicant knew or should have known was false or misleading;

(2) The system was not installed or is not being operated substantially in accordance with the National Electrical Code or applicable interconnection requirements;

(3) The ECG-customer has failed to comply with the conditions of approval to operate or representations made in their filing for approval to operate; or

(4) Other conditions, consistent with (1) through (3) above, exist which the commission finds necessitates revocation, suspension or placing conditions on the authorization to interconnect.

(c) In determining the consequences of its finding in (a) above, the commission shall consider the following:

(1) The severity of the consequences resulting from the violation such that the more severe the infraction, the more severe the consequence;

(2) Mitigating circumstances, such as how quickly the ECG-customer took action to rectify the situation, how much control the ECG-customer had over the situation, and other circumstance which would tend to lessen fault; and

(3) Prior violations of Puc 900.

Puc 908.07 Utilities shall Report Number and Size of Net Energy Metered Units.

(a) Each distribution utility shall:

(1) Track the number and size of net energy metered systems on their lines;

(2) Report to the commission annually by April 1 of each year for the prior year, the

following as regards net energy metered units:

- a. The number of units operating;
- b. The generation output rating of the units in kilowatts; and
- c. The total capacity of units' generation output operating on the utility's distribution system relative to the ~~.051.0~~% of annual peak energy demand limitation mandated by RSA 362-A:9,I; and

(3) Notify the commission within 10 business days when the distribution utility has reached the ~~.051.0~~% of its annual peak energy demand limit mandated by RSA 362-A:9,I.

Puc 908.08 Existing Systems Grandfathered.

(a) Net energy metering systems that have been interconnected with the distribution utility with the knowledge of the distribution utility as of the initial effective date of Puc 900 shall:

- (1) Be deemed to be registered; and
- (2) Not be required, due to the adoption of Puc 900, to:
  - a. Re-apply for interconnection pursuant to Puc 904; or
  - b. Upgrade to meet the applicable requirements for interconnection of Puc 905, the requirements for inverter units of Puc 906, or the requirements for non-inverters of Puc 907.

(b) The grandfathered systems referred to in (a) above shall comply with the procedural requirements for interconnected units contained in Puc 908.

(c) ~~An ECGA customer-generator~~ may repair his or her net energy metered system that is grandfathered under (a) above, such as by repairing relays in a non-inverter system, but if ~~the ECGa customer-generator~~ changes the inverter or adds to the generation output or otherwise upgrades or alters the system as provided in Puc 904.05, ~~he or she~~ the customer-generator shall update the qualifications of the system as provided in Puc 904.05.

(d) The distribution utility ~~and~~/or electricity supplier may request and the ~~ECG-customer~~ shall provide, as to any system grandfathered under this section, the information required in connection with the interconnection application form set forth in Puc 904.02, and the customer shall, without request, update such information as it may change.

(e) A generation system that has been interconnected with its distribution utility prior to the initial adoption of Puc 900 without the knowledge of the distribution utility shall not be grandfathered for purposes of this section.

~~Puc 908.09 Grace Period for Inverter Units and Surge Protection.~~

~~(a) — For a period of 9 months following the initial effective date of Puc 900, applications for systems with current and recent inverter designs that comply with the protection provisions of IEEE 929-2000, referenced in Puc 906.01(a)(1), shall be deemed to meet the approval criteria of Puc 906 unless and until the inverter is replaced or upgraded as described in Puc 904.05, even though the inverter does not meet the surge protection requirements of Puc 906.01(b).~~

~~(b) — The approval described in (a) above shall continue beyond the grace period except to the extent the unit is replaced or upgraded as described in Puc 904.05.~~

Puc 908.~~10~~.09 Relationship to Other Commission Rules

(a) Unless otherwise specified, Puc 900 shall not supersede any other rule of the commission but, supplement such rules.

Puc 908.~~11~~10 Transferability.

(a) An ~~ECG's customer-generator's~~ certificate to operate a net metered system shall transfer to the new owner when the property with the net metered system is sold or otherwise conveyed, if the new owner provides the distribution utility in writing:

(1) Any changed information provided in connection with the interconnection application described in Puc 904.02; and

(2) An agreement to operate and maintain the net metering system according to Puc 900, RSA 362-A and other applicable requirements.

(b) The distribution utility shall not deny a new owner acquiring a currently duly registered net energy metering facility, which otherwise complies with the requirements of Puc 900, the right to register, as long as the new owner complies with (a) above.

(c) The new customer-ECG generator owner, as described in (a) and (b) above, shall notify the distribution utility of the transfer and of the applicable information required by the interconnection application in Puc 904.02.

(d) Transfers of a net metered facility as described in the section shall not be construed as exiting from the system and Puc 902.03(j) shall not apply to any such transfer.



(e) If any change or upgrade in a system would otherwise require new approval pursuant to Puc 904.05, mere ownership transfer shall not relieve the ECG-customer-generator from the requirement.

## APPENDIX

<b>Rule(s)</b>	<b>State Statute (RSA)</b>	<b>Federal Statute</b>	<b>Federal Regulation</b>
Puc 900 (other specific statute provisions implemented by specific rules are listed below)	RSA 362-A:9,V		
Puc 904.02	RSA 541-A:16,(b)		
Puc 908.03	RSA 365:8,I		
Puc 908.05	RSA 541-A:30,II		
Puc 908.06	RSA 374:15		

## Simplified Process Interconnection Application and Service Agreement

### Contact Information:

Date Prepared: \_\_\_\_\_

Legal Name and address of Interconnecting Customer (or, Company name, if appropriate)

Customer or Company Name (print): \_\_\_\_\_ Contact Person, if Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Alternative Contact Information (e.g., ~~system installation~~ **electrical** contractor or coordinating company, if appropriate):

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Electrical Contractor Contact Information (if appropriate):

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

License No. \_\_\_\_\_

### Facility Information:

Address of Facility: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

License No. \_\_\_\_\_

Electric ~~Utility~~ **Utility** Company: \_\_\_\_\_ Account Number: \_\_\_\_\_ Meter Number: \_\_\_\_\_

Competitive Electric Supplier (if not supplied by local electric utility) \_\_\_\_\_ Account No. \_\_\_\_\_

Inverter Manufacturer: \_\_\_\_\_ Model Name and Number: \_\_\_\_\_ Quantity: \_\_\_\_\_

Nameplate Rating: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA) \_\_\_\_\_ (AC Volts) Single \_\_\_\_\_ or Three \_\_\_\_\_ Phase

System Design Capacity: \_\_\_\_\_ (kVA) \_\_\_\_\_ (kVA)

Net Metering: If Renewably Fueled, will the account be Net Metered? Yes \_\_\_\_\_ No \_\_\_\_\_

Prime Mover: Photovoltaic ☐ Reciprocating Engine ☐ Fuel Cell ☐ Turbine ☐ Other \_\_\_\_\_

Energy Source: Solar ☐ Wind ☐ Hydro ☐ Diesel ☐ Natural Gas ☐ Fuel Oil ☐ Other \_\_\_\_\_

UL 1741.1 (IEEE 1547.1) Listed? Yes \_\_\_\_\_ No \_\_\_\_\_

Estimated Install Date: \_\_\_\_\_ Estimated In-Service Date: \_\_\_\_\_

### Customer Signature

I hereby certify that, to the best of my knowledge, all of the information provided in this application is true and I agree to the Terms and Conditions on the following page:

Interconnecting Customer Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

*Please attach any documentation provided by the inverter manufacturer describing the inverter's UL 1741 listing.*

Approval to Install Facility (For Company use only)



Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any system modifications, if required (Are system modifications required? Yes \_\_\_ No \_\_\_ To be Determined \_\_\_):

Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Company waives inspection/Witness Test? Yes \_\_\_ No \_\_\_

**Application ID No.**

## Certificate of Completion for Simplified Process Interconnections

### Installation Information:

☐ Check if owner-installed

Customer or Company Name (print): \_\_\_\_\_ Contact Person, if Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Address of Facility (if different from above): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Electrical Contractor's Name (if appropriate): \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

License number: \_\_\_\_\_

Date of approval to install Facility granted by the Company: \_\_\_\_\_

Application ID number: \_\_\_\_\_

### Inspection:

The system has been installed and inspected in compliance with the local Building/Electrical Code of

\_\_\_\_\_  
(City/County)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection):

\_\_\_\_\_  
Name (printed): \_\_\_\_\_

Date: \_\_\_\_\_

As a condition of interconnection you are required to send/fax a copy of this form to (insert Company's name below):

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Mail 1: \_\_\_\_\_

Mail 2: \_\_\_\_\_

City, State ZIP: \_\_\_\_\_

Fax No.: \_\_\_\_\_

**Readopt with Amendment Chapter Puc 900, effective 1-12-09 (Document # 7424) to read as follows:**

**CHAPTER Puc 900 NET METERING FOR CUSTOMER-OWNED RENEWABLE ENERGY GENERATION RESOURCES OF 100 KILOWATT OR LESS**

**PART Puc 901 PURPOSE**

Puc 901.01 Purpose. The purpose of Puc 900, pursuant to the mandate of RSA 362-A:9, is to establish reasonable interconnection requirements for safety, reliability and power quality for net energy metering as the public interest requires, and consistent with the legislative declaration of purpose set forth in RSA 362-A:1, in which the legislature found:

(a) It to be in the public interest to provide for small scale and diversified sources of supplemental electrical power to lessen the state's dependence upon other sources which may, from time to time, be uncertain;

(b) It to be in the public interest to encourage and support diversified electrical production that uses indigenous and renewable fuels and has beneficial impacts on the environment and public health; and

(c) That net energy metering for eligible customer-generators may be one way to provide a reasonable opportunity for small customers to choose interconnected self generation, encourage private investment in renewable energy resources, stimulate in-state commercialization of innovative and beneficial new technology, enhance the future diversification of the state's energy resource mix, and reduce interconnection and administrative costs.

**PART Puc 902 DEFINITIONS**

Puc 902.01 “Distribution utility” means the company that owns and/or operates the distribution facilities delivering electricity to the eligible customer-generator’s premises.

Puc 902.02 “Electric utility customer” as used in the definition of “eligible customer-generator” means any residential, commercial or industrial ratepayer of a distribution utility.

Puc 902.03 “Electricity suppliers” means “electricity suppliers” as defined in RSA 374-F:2, II, namely “suppliers of electricity generation services and includes actual electricity generators and brokers, aggregators, and pools that arrange for the supply of electricity generation to meet retail customer demand, which may be municipal or county entities.”

Puc 902.04 “Eligible customer-generator (“customer-generator”) means “an electric utility customer who owns and operates electrical generating facilities powered by renewable energy with a total peak generating capacity of not more than 100 kilowatts (kW) that is located on the customer’s premises, is interconnected and operates in parallel with the electric grid, and is



intended primarily to offset part or all of the customer's own electricity requirements.

Puc 902.05 "Generation capacity" means, for inverter based units, the kilowatt rating of the inverter, and for other interconnections, the kilowatt rating of the generation unit.

Puc 902.06 "Islanding" means a condition in which a portion of the utility system that contains both load and dispersed generation is isolated from the remainder of the utility system.

Puc 902.07 "Net energy metering" means "net energy metering" as defined in RSA 362-A:1, III-a, namely, "measuring the difference between the electricity supplied over the electric distribution system and the electricity generated by an eligible customer-generator which is fed back into the electric distribution system over a billing period.

Puc 902.08 "Renewable energy" means electricity produced by renewable resources including geothermal, tidal or wave, wind, solar, landfill gas, hydro, biomass, bio-oil, bio-synthetic gas and biodiesel resources.

Puc 902.09 "Witness test" means the process used by the electric utility following the interconnection of a customer generation facility to determine whether the interconnection affects the safety, reliability or power quality of the distribution system.

## PART Puc 903 GENERAL RULES, RIGHTS AND OBLIGATIONS

### Puc 903.01 General Rules, Rights and Obligations.

(a) Any distribution utility and any electricity supplier operating within the state of New Hampshire shall, upon request, provide net energy metering to eligible customer generators pursuant to Puc 900 and RSA 362-A:9.

(b) A distribution utility shall comply with Puc 900 in a non-discriminatory manner and shall not unreasonably withhold its permission to interconnect an eligible customer's generating facility.

(c) Any electricity supplier operating within New Hampshire that is not the default service provider shall offer net metering pursuant to Puc 900 but may provide for rates and terms as provided in RSA 362-A:9, III and Puc 903.02(i).

(d) Any customer-generator who engages in net energy metering in New Hampshire shall comply with Puc 900.

(e) A customer-generator shall comply with:

(1) Applicable commission-approved rules, tariffs and terms and conditions of the distribution utility not in conflict with Puc 900; and

(2) Any local, state or federal law, statute or regulation which applies to the design, siting, construction, installation, operation, or any other aspect of the customer's generating and interconnection facility.

(f) Interconnection with the distribution utility under Puc 900 shall not authorize a customer-generator to utilize the distribution utility's electric distribution system for the transmission or distribution of electric power.

(g) The distribution utility shall have the right to review the design of a customer's generating and interconnection facility and to inspect such facility prior to the commencement of operation.

(he) The distribution utility may require a customer-generator to make modifications to its facility as necessary to comply with the requirements of Puc 900.

(i) The distribution utility's review and authorization for operation shall not be construed as confirming or endorsing the customer-generator's design or as warranting the generating or interconnection facility's safety, durability or reliability.

(j) The distribution utility shall not, by reason of such review or lack of review, be responsible for the strength, adequacy, or capacity of such facility's equipment.

(k) A customer's generating and interconnection facilities shall be reasonably accessible to the distribution utility personnel as necessary for the distribution utility to perform its duties and exercise its rights under its tariffs and terms and conditions filed with and approved by the commission, and Puc 900.

(l) Any information pertaining to generating or interconnection facility provided to a distribution utility by a customer-generator shall be treated by the distribution utility in a confidential manner.

(m) A customer-generator shall operate and maintain its generating and interconnection facility in a manner that is as safe, dependable and efficient as practicable.

Puc 903.02 Statutory and Other Requirements.

(a) Electric distribution utilities shall make net energy metering available to eligible customer-generators, pursuant to RSA 362-A:9 and Puc 900.

(b) Eligibility for net energy metering shall be available on a first-come, first-served basis

within each distribution utility service area under the jurisdiction of the commission until such time as the total rated generating capacity owned and operated by customer-generators totals 1.0 percent of the annual peak energy demand distributed by each such distribution utility as determined by the commission from time to time, pursuant to RSA 362-A:9.

(c) Net energy metering shall be accomplished using a single meter capable of registering the flow of electricity in two directions, pursuant to RSA 362-A:9.

(d) Notwithstanding (c) above, an additional meter or meters to monitor the flow of electricity in each direction may be installed, provided that it is not at the expense of the customer-generator unless requested by the customer-generator.

(e) If the output of the customer's facility will be measured for the purposes of recording renewable energy output under RSA 362-F:A, a second meter measuring the flow of electricity from the facility may be installed at the customer's expense.

(f) If an additional meter or meters are installed, as described in (d) above, the net energy metering calculation shall yield the same result as when a single meter is used, pursuant to RSA 362-A:9.

(g) The net energy metering calculation shall be made by taking the difference between the electricity supplied over the electric distribution system and the electricity generated by the customer-generator and fed back into the electric distribution system over the billing period, pursuant to RSA 362-A:9.

(h) Each electric distribution utility shall, pursuant to RSA 362-A:9, offer net energy metering to each customer-generator on terms which shall be identical, with respect to rates, rate structure, and periodic charges, to the contract or tariff to which the same customer would be assigned if such customer was not a customer-generator.

(i) Electricity suppliers may voluntarily determine the terms, conditions, and prices under which they will agree to provide generation supply to and purchase net generation output from customer-generators, however, electricity suppliers who provide default energy service to such a customer shall only bill for the net energy supplied as calculated in accordance with (h) above, pursuant to RSA 362-A:9.

(j) Pursuant to RSA 362-A:9, the following shall apply to net energy measurement:

(1) The net energy produced or consumed on a monthly basis shall be measured in accordance with normal metering practices;

(2) Where the electricity supplied to the customer-generator over the electric distribution system exceeds the electricity generated by the customer-generator during the billing period, the customer-generator shall be billed based on the net energy



supplied for distribution services and other charges in accordance with this section and standard applicable rates; and

(3) Where the electricity generated by the customer-generator exceeds the electricity supplied by the electric grid, the customer-generator shall be credited over subsequent billing periods for the excess kilowatt hours generated in accordance with this section.

(k) Upon exit from the net energy metering system, there shall be no payment or credit to a customer-generator for any remaining excess generation.

(l) The commission shall waive any provision of Puc 900 or RSA 362-A after notice and an opportunity for a hearing, if it determines that waiver of the applicable statute or rule section is a net energy metering arrangement that is part of a utility strategy to minimize distribution costs, pursuant to RSA 362-A:9.

(m) The commission shall consider any request for a waiver, whether filed pursuant to (l) above or otherwise, pursuant to Puc 201.05, titled waiver of rules.

#### PART Puc 904 INTERCONNECTION APPLICATION PROCESS

##### Puc 904.01 Pre-application Review.

(a) Before purchasing or installing net energy metering equipment, a customer may request that the customer's distribution utility informally review the proposed project and provide information on:

(1) Whether the customer's distribution utility is under the cap established by RSA 362-A:9,I;

(2) Whether the customer's generation facility and electric grid interface unit, in the opinion of the distribution utility, is likely to comply with the requirements of Puc 900; and

(3) Whether the customer is in an area or service location which is likely to require any upgrade or study.

(b) At the pre-application stage the distribution utility shall provide the customer its best evaluation, given the information it has available, but shall not be required to conduct a study or elaborate review of the project.

##### Puc 904.02 Interconnection Application .

(a) To initiate the process to engage in net energy metering, a customer shall file with its

distribution utility and, if applicable, its electricity supplier, an interconnection application form.

(b) When filing an application with the distribution utility, to obtain evidence of the filing and the date of filing, the applicant shall:

- (1) File the application by certified mail; or
- (2) Obtain a dated acknowledgment of receipt from the distribution utility; or
- (3) Obtain written or electronic verification of receipt from the distribution utility by other means consistent with (1) and (2) above.

(c) The interconnection application form shall include the following:

(1) Applicant information which shall include:

- a. The customer's name;
- b. The customer's full mailing address
- c. The facility location, if different from above;
- d. The customer's daytime and evening telephone number;
- e. The information provided in a., b., and d. above for an alternative contact person when the customer is unavailable;
- f. The name of the local distribution utility and the customer's account number; and
- g. If different than the distribution utility, the name of the customer's electricity supplier and the customer's account number;

(2) Generating facility information, including:

- a. The generator type, whether solar, wind – hydro or other renewable source as defined in RSA 362-F:4, I, (a) through (f) ;
- b. The generator manufacturer, model name and number;
- c. The number of phases of the unit, whether single or three phase;
- d. The power rating of the generation output of the system in kilowatts;

- e. If applicable, the inverter manufacturer, model name and number;
- f. Whether a battery backup will be used or not; and
- g. Whether an exterior manual disconnect switch for utility use shall be installed, if the generation output of the unit is less than or equal to 10 kilowatts in size; and

(3) Installation information and certification, which shall include:

- a. Whether the generator shall be owner installed;
- b. The installation date;
- c. The anticipated interconnection date;
- d. The name, complete address, telephone number and license number of the installing electrician, if applicable;
- e. The name and company affiliation of the vendor selling the generator to the customer;
- f. The signature, with the date of signature, of the vendor, certifying that the system hardware is in compliance with Puc 900;
- g. Certification, if applicable, that the system has been installed in compliance with the local municipal building and electrical code in the form of:
  - 1. A signed and dated certificate by the applicable local code official; or
  - 2. A copy of a signed and dated final inspection certificate from the municipality; and
- h. A signed and dated certification by the customer that:
  - 1. The customer has installed and shall operate the generation system in compliance with Puc 900;
  - 2. The initial start-up test required by Puc 905.04 has been successfully completed; and
  - 3. To the best of the customer's knowledge, all of the information



contained in the interconnection notice is true and correct; and

i. Responses to the questions posed in Puc 904.01.

(d) A customer may submit an interconnection application to its distribution utility when the customer's facility has not been fully installed and tested, but shall:

(1) Provide in writing in connection with the interconnection application a description of any manner in which the facility is not fully connected, tested or is not yet otherwise in compliance;

(2) Fulfill any unmet requirements prior to interconnecting; and

(3) Upon completion of unmet interconnection requirements, provide the distribution utility with any necessary updated written certifications required by this part.

(e) The distribution utility shall not interconnect the facility until all requirements pursuant to (d) above are met.

(f) Upon request, the distribution utility shall provide the customer written confirmation that the interconnection application has been received and the date of receipt as follows:

(1) When the application is filed in person, immediately; or

(2) When the application is filed by mail or other means, within 10 business days of receipt, with written acknowledgement that states that:

a. The application is complete; or

b. That the application is incomplete and what information is necessary to complete the requirements.

(g) When the distribution utility provides a receipt for an application it may clarify that the receipt acknowledges the date and fact of a filing, but not the approval of the filing.

(h) A sample interconnection application form is set forth in appendix II to Puc 900.

Puc 904.03 Mutual Indemnity Provision.

(a) Each party shall hold harmless, and indemnify the other party and its directors, officers, agents and employees against any and all loss, liability, damage, or expense, including any direct, indirect or consequential loss, liability, damage, or expense, but not including attorneys' fees unless awarded by a court of competent jurisdiction, for injury or death to persons, including employees of either party, and damage to property, including property of either party, arising out

of or in connection with intentional, willful, wanton, reckless or negligent conduct regarding:

(1) The engineering, design, construction, maintenance, repair, operation, supervision, inspection, testing, protection or ownership of the party's facilities; or

(2) The making of replacements, additions, or improvements to, or reconstruction of, the party's facilities.

(b) Neither party shall be indemnified by this provision for any loss, liability, damage, or expense resulting from its sole negligence or willful misconduct.

(c) Notwithstanding this indemnity provision, except for a party's willful misconduct or sole negligence, each party shall be responsible for damage to its own facilities resulting from electrical disturbances or faults.

(d) This mutual indemnity provision shall become effective as between the respective parties upon interconnection of the ECG to the electric grid.

(e) The terms of indemnity provision described in this section shall not be construed to relieve any insurer of its obligations to pay any insurance claims in accordance with the provisions of any valid insurance policy.

Puc 904.04 Application Completeness Review.

(a) The interconnection process begins when the eligible customer generator submits a complete application pursuant to this part.

(b) The distribution utility shall evaluate the application for completeness and notify the customer in writing within 10 business days of the application's receipt whether the application is or is not complete and, if the application is not complete, inform the customer in writing what information is missing.

(c) The distribution utility shall verify that the customer's facility equipment passes the requirements of Puc 905.

(d) If the distribution utility approves the application, the distribution utility shall sign the application and return the approved application to the customer.

(e) If the distribution utility determines that interconnection of the customer generation facility would jeopardize the safety, reliability or power quality of the local distribution system, the distribution utility shall require the customer to pay for necessary modifications to the distribution system before the application is approved.

(f) In the event that the distribution utility requires the customer to pay for system modifications pursuant to (e) above, the distribution utility shall provide the customer a description of work and an estimate of the cost for approval.

(g) If the customer agrees to pay for the system modifications, the customer shall sign the description of the work and submit a signed copy and the payment of the estimated costs to the distribution utility.

(h) Upon receipt of the customer's approval and payment, the distribution utility shall perform the system modifications.

(i) Upon completion of the system modifications, the distribution utility shall sign the application approval and provide a copy of the signed approval to the customer.

Puc 904 05. Installation and Interconnection of Facility

(a) Upon receipt of an application signed by the distribution utility, the customer may install the generating facility.

(b) Following installation of the facility, the customer shall arrange for inspection of the completed installation by the local building inspector or, if one is not available, a New Hampshire licensed electrician.

(c) The person who inspects the installation pursuant to (b) above shall sign a certificate of completion.

(d) If the facility was installed by an electrical contractor, the customer shall also have the contractor complete a certificate of completion.

(e) When the customer has the signatures pursuant to (c) and (d) above, the customer shall provide the distribution utility with a copy of the certificates of completion.

(f) Following receipt of the certificate(s) of completion, the distribution utility may inspect the customer's facility for compliance with standards by arranging for a witness test.

(g) Until a witness test has been performed, the customer shall have no right to operate in parallel unless a witness test has been previously waived by the distribution utility on the application form.

(h) If the distribution utility elects to conduct a witness test, the distribution utility will attempt to conduct it within 10 business days of the receipt of the certificate of completion.

(i) All projects larger than 10 kW shall be subject to a witness test unless the distribution utility has waived the witness test on the application form.

(j) If the witness test shows that the facility is appropriately installed and functioning without jeopardizing the safety, reliability or power quality of the distribution system, the distribution utility shall notify the customer in writing that the interconnection is authorized.

(k) If the witness test results indicate that the facility installation jeopardizes the safety, reliability or power quality of the distribution system, the distribution utility shall disconnect the facility provided that the distribution utility inform the customer in writing what actions are required to mitigate the safety, reliability or power quality issues along approval of the facility interconnection.

(l) If the customer does not substantially complete construction within 12 months after receiving application approval from the distribution utility, the distribution utility shall require the customer to reapply for interconnection.

(m) As to a generating facility up to 25 kW that does not interface with the electric grid by means of an inverter, the distribution utility shall have a period of 75 days from the initial filing of the interconnection application to:

- (1) Assess the proposed system and the customer's site characteristics;
- (2) Communicate with the customer regarding adequate protective interface devices;  
and
- (3) Allow the applicant to interconnect or provide the customer specific written reasons for objecting to interconnection.

(n) If the customer and the distribution utility agree that the application reasonably requires more time before the distribution utility responds as provided in (m)) above, as applicable, they may agree to extend the deadline for response.

(o) Except as provided in (n) above, if the distribution utility is not able to respond to the applicant within the 10 day review period for inverter based systems or 75 day review period for non-inverter based systems and the customer does not agree to an extension of the response time, the distribution utility shall:

- (1) Notify the commission and the customer in writing no later than the expiration of the relevant period;
- (2) Petition the commission for an extension of a specified length; and



(3) Cite the specific reasons why the deadline was not met and the basis for the length of the requested extension.

(p) The commission shall grant an extension for review of the application for the shortest time reasonable, if any, if it determines that it is necessary to provide the distribution utility additional time to assess the effect of the proposal on safety, reliability or power quality of the electric distribution system in light of:

(1) The complexity of the characteristics of the site;

(2) The complexity of the proposed generation and interconnection facilities; or

(3) Delay occasioned by:

a. Failure of the customer to timely provide the distribution utility information necessary to assess the potential impact of the system on safety, reliability or power quality of the electric grid;

b. Untimely response by the customer to the distribution utility in response to a distribution utility request for information; or

c. Circumstances beyond the control of the distribution utility that prevent the utility from responding within the time limits established by this section.

(q) The distribution utility shall notify the customer as soon as reasonably possible of any required information not included in the customer's interconnection application filing, but not later than 30 days following filing of an application that the customer indicates is complete.

(r) If the distribution utility has not met the applicable deadline for responding to a completed application pursuant to (m) above and has not petitioned for an extension pursuant to (o) and (p) above, the customer may:

(1) Contact the distribution utility and commission and request resolution; or

(2) File a complaint with the commission.

(s) Prior to operation, during normal business hours, the customer shall:

(1) Provide the distribution utility the opportunity to inspect the unit; and

(2) Upon request, demonstrate to the distribution utility the operation of the unit.

(t) The distribution utility shall interconnect with any customer-generator which:

- (1) Receives electric service from the distribution utility;
- (2) Has completed the application process required by this section; and
- (3) Has installed a net energy metering system that complies with the interconnection and technical specification requirements of Puc 900.

(u) Facilities that meet the interconnection requirements of Puc 900 shall not be required by the distribution utility to meet additional requirements, perform or pay for additional tests, or pay additional interconnection-related charges, unless as otherwise provided.

(v) Nothing in (u) above shall prohibit a party from petitioning the commission, pursuant to Puc 201.05, as to any net energy metered facility, to require additional interconnection requirements, performance of or payment for additional tests, or payment of additional interconnection-related charges.

(w) A net metered customer, a distribution company or an electricity supplier may install additional controls or meters or conduct additional tests, beyond those required by Puc 900, but if entry to the customer-generator's premises is necessary, shall first obtain consent to access the premises pursuant to Puc 908.03.

(x) The expenses associated with the additional tests, meters, and/or equipment described in (l) above shall be borne by the party desiring the additional tests, meters and/or equipment.

(y) For facilities larger than 25 kW, the distribution utility shall require a site specific interconnection review that may require additional protective equipment and may exceed the 75 day time frame.

Puc 904.06 Upgrades or Changes in the Net Metering System.

(a) The customer-generator shall provide the distribution utility with a written update of any of the information required to be provided on the interconnection application as any changes occur.

(b) The customer-generator shall re-certify to their distribution utility the applicable certifications required by Puc 904.05(c) and (d), when any of the following occurs:

- (1) The generation capacity is increased or its source is changed;
- (2) Any key component of the system, such as the inverter, is replaced or upgraded; or
- (3) The relays for a non-inverter system, are replaced, rewired or upgraded.

Puc 904.07 Insurance

(a) The customer-generator shall not be required by the distribution utility or electricity supplier to purchase or maintain property insurance or comprehensive personal liability insurance to protect against potential liability resulting from the installation, operation or ownership of the generation and interconnection facility.

PART Puc 905 TECHNICAL REQUIREMENTS FOR INTERCONNECTION FOR FACILITIES

Puc 905.01 Facilities 100 kW or Less May Opt for No Disconnect Switch.

(a) No facility shall be required to install and maintain a manual disconnect switch for utility use.

(b) If the distribution utility finds it necessary for scheduled maintenance of which the customer-generator has received reasonable notice or in an emergency situation, to disconnect from the electric grid a customer-generator who does not maintain a manual disconnect switch for utility use, the utility may do so by:

- (1) Pulling the customer's meter;
- (2) Disconnecting the customer's service at the site transformer; or
- (3) Executing any other reasonable method of disconnection.

(c) If the customer-generator has been notified of a scheduled maintenance or other event requiring disrupting generation or service, as an alternative to having his or her service disconnected, and upon agreement of the distribution utility, the customer-generator or their representative may be present at the scheduled time of disruption of service and demonstrate to the utility representative that generation has been isolated from the utility grid and remains isolated for the duration of the required period.

(d) If the customer-generator schedules a meeting with the distribution utility for disconnection of the system, as described in (c) above, and the customer-generator does not meet at the scheduled time, the distribution utility may disconnect the service as provided in (b) above.

(e) If the customer-generator does not install a manual disconnect device accessible to the utility, the customer-generator:

- (1) Shall assume all risks and consequences associated with the loss of power to the customer's premises during any period when the distribution utility is required to disconnect the customers electric service; and

(2) Acknowledges that the service disconnection shall interrupt all electric service to the customer-generator site.

(f) Any customer-generator may agree to install a manual disconnect device accessible to the distribution utility.

(g) If the customer-generator elects not to install a disconnect switch for use by the distribution utility, the customer-generator shall install a warning label, to be provided by their distribution utility, on or near their service meter location.

Puc 905.02 Disconnect Switch.

(a) A facility that elects to install a manual disconnect switch for utility use shall meet the following requirements:

- (1) The disconnect switch shall be an external, manual, visible, gang-operated, load break disconnecting switch;
- (2) The customer-generator shall purchase, install, own, and maintain the disconnect switch;
- (3) The disconnect switch shall be located between the power producing equipment and its interconnection point with the distribution utility system;
- (4) The disconnect switch shall meet applicable standards established by Underwriters Laboratories, American National Standards Institute, the National Electrical Code and Institute of Electrical and Electronic Engineers;
- (5) The disconnect switch shall be clearly marked, "Generator Disconnect Switch", with permanent letters 3/8 inch or larger;
- (6) The disconnect switch shall be located at a location on the property of the customer-generator mutually agreeable to the customer-generator and the distribution utility;
- (7) The disconnect switch shall be readily accessible for operation and locking by distribution utility personnel; and
- (8) The disconnect switch must be lockable in the open position with a standard padlock with a 3/8 inch shank.

(b) For purposes of this section, a "gang operated" switch, means a switch in which the separate switches for each phase are operated as a group from a single control.



Puc 905.03 Configuration of the Transformer Serving the Customer's Generation Site.

(a) The existing site transformer serving the customer-generator load may be used if its use will not significantly degrade the power quality or voltage regulation on the secondary distribution system and if such usage will not create problems for distribution utility system relaying.

(b) For single phase distributed generators connected to 4-wire multi-grounded neutral systems, the high side of the step-up transformer shall be connected phase to neutral.

(c) A phase to phase high side connection shall be allowed if it does not degrade power quality or voltage regulation on the distribution system.

(d) For single phase distributed generators connected to three wire or four wire impedance grounded systems, the step-up transformer high-side winding shall be connected phase to phase.

(e) For 3 phase distributed generators connected to 4-wire multi-grounded distribution systems, the step-up transformer may be an existing grounded-wye to grounded-wye transformer.

(f) In cases as described in the paragraph above, the generator shall be impedance grounded as necessary to achieve effective grounding but limit the desensitization of the distribution utility system ground fault relaying.

(g) The generation system site shall be impedance grounded, as described in (f) above, if necessary, in a manner adequate to assure that the unit does not:

(1) Significantly degrade the power quality or voltage regulation on the distribution system;

(2) Create significant safety problems; or

(3) Create problems for distribution utility system relaying.

(h) To guard against over voltages on the unfaulted phases of a three-phase utility primary, if the transformer serving the customer-generator site is ungrounded, over voltage protection shall be used which is designed to detect a situation where the utility has tripped due to a phase to ground fault, and the connected ungrounded generator may not yet have tripped, and to trip the generator at high speed.

(i) "Wye" as used in this section, means the configuration in which one end of each transformer winding is connected to a common point and the other to its appropriate line terminal, resembling the letter "Y".

(j) The cost of any improvements necessary to the site transformer serving the net metered facility shall be borne according to the distribution utility's approved tariff on file with the commission.

Puc 905.04 Initial Testing.

(a) After installation of the generation facility and before final approval and interconnection to the electric grid, the customer shall, in addition to the certifications required in connection with the interconnection application, conduct a load-break test on the generator, as described in (b) below, to confirm that the anti-islanding controls are functioning.

(b) When conducting a load-break test, the customer shall demonstrate that after the main disconnect switch or circuit breaker of the residence or building is opened, the generation unit shuts down within 2 seconds.

(c) If the generation unit fails to shut down within 2 seconds after conducting the test as provided in (b) above, the customer shall inform its distribution utility.

(d) The customer shall provide an initial test on a non-inverter interfaced system, by demonstrating that:

- (1) The relays function as designed;
- (2) The relays have been calibrated to settings as provided by the distribution utility pursuant to Puc 907.01(f);
- (3) All key components of the system function as designed; and
- (4) The anti-islanding function of the unit works properly.

(e) The testing of the relays of a non-inverter interfaced system shall be conducted by an individual that:

- (1) Utilizes test equipment:
  - a. Necessary to adequately test the key components of the system;
  - b. That is calibrated within tolerances sufficient to assure accurate testing; and
  - c. That is calibrated with a frequency consistent with industry standards;
- (2) Has received the education and training necessary to conduct the sophisticated testing of relays and other components of a non-inverter based generator; and

(3) Maintains any professional accreditation or certification necessary for the testing of this nature.

(f) The individual conducting the testing of a non-inverter based system required by this section shall, upon request, provide the distribution utility information on his or her background and credentials, and equipment, maintenance and calibration of the equipment sufficient to allow the utility to assess the individual's competence to undertake the required testing.

(g) Upon request, the customer shall allow the distribution utility to have a representative present for the initial or periodic testing required by this part.

Puc 905.05 Periodic Testing.

(a) As to a generator facility which interfaces with the electric grid by an inverter, the ECG shall, if requested to do so by its distribution utility, conduct a load-break test, as described in Puc 905.04(b), once per year after installation.

(b) As to a generator that interfaces with the electric grid by a non-inverter, the ECG shall:

(1) Conduct a load-break test, as described in Puc 905.04, once per year after installation; and

(2) Verify the proper calibration and protective function of the components and systems of the generation unit, which shall include the testing prescribed by the unit manufacturer:

a. Once every 4 years or according to the schedule recommended by the manufacturer, whichever is more frequent, for facilities rated greater than 25 kW; or

b. Once every 4 years for facilities rated 25 kW or less.

(c) The testing of the calibration and protective function of the components and systems of a non-inverter interfaced system shall be conducted by an entity qualified as provided in Puc 905.04(e) and (f).

(d) The customer-generator shall:

(1) Create a written record of the dates and procedures for tests conducted pursuant to this section; and

(2) Maintain the written record of verification testing for inspection by the distribution utility for a period of 4 years from the date of the respective test.

Puc 905.06 Studies and Analysis.

(a) A distribution utility may conduct detailed load flow, voltage regulation, or short circuit coordination studies of the primary feeder if it determines that the addition of a net metered generation unit will push the aggregate capacity of distributed generation on the feeder to the threshold level, described in (b) and (c) below.

(b) The distribution utility may deem the threshold of concern for aggregate distributed generation as reached if:

- (1) The lower of 7.5% of the peak feeder demand as measured at the substation or 20% of the peak feeder demand downstream of the point of interconnection is reached;
- (2) More than one net metered unit is proposed to be installed on the same secondary shared by many customers; or
- (3) Any other reasonable means, consistent with (1) or (2) above, of determining that a study is necessary.

(c) The distribution utility shall deem the threshold of concern for aggregate distributed generation as reached if it determines that the addition of the proposed generation unit poses a reasonable threat to the continued safety, reliability or power quality to any significant portion of the electric grid.

(d) The distribution utility shall absorb the cost within its rate base for any studies or analyses which it deems necessary to evaluate a proposed net energy metered system and/or the electric grid relative to such a system.

Puc 905.07 Payment for Upgrades or Improvements to the Electric Grid.

(a) If an upgrade or an improvement to the electric grid up to the customer's meter is necessary for the distribution utility to interconnect to the ECG's net energy metered system, the expense shall be borne according to the utility's approved tariff on file with the commission.

PART Puc 906 COMPLIANCE PATH FOR INVERTER UNITS

Puc 906.01 Inverter Requirements.

(a) A net energy metered project which connects to the electric grid by means of a single-phase or three-phase inverter shall be deemed to be compliant with the technical specifications for the generation unit itself, as established by Puc 900, if the unit complies with the minimum



requirements set forth in the following national standards:

(1) The “IEEE Recommended Practice for Utility Interconnections ANSI/IEEE STD 1547” issued by the Institute of Electrical and Electronic Engineers, Inc., Piscataway, New Jersey, May, 2000; and

(2) The “UL 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems”, issued by Underwriters Laboratories, Inc., of 333 Pfingsten Road, Northbrook, Illinois 60062, May, 2007; and

(b) A net metered system shall be installed in accordance with the National Electrical Code, 2008, issued by the National Fire Protection Association, Quincy, Massachusetts;

#### PART Puc 907 COMPLIANCE PATH FOR GENERATION UNITS NOT USING AN INVERTER

##### Puc 907.01 Interconnection Requirements.

(a) Except as provided in (b) below, any net energy metered generation system which interfaces with the electric grid by means other than an inverter shall:

(1) Meet the following safety and service quality requirements:

a. The system shall not compromise the safety of the distribution utility personnel, the ECG or other customers on the electric grid;

b. The system shall have:

1. Adequate non-islanding protection;

4. Utility-grade protective devices to separate the facility from the electric distribution system, including:

(i) Time over-frequency protection;

(ii) Time under-frequency protection;

(iii) Time over-voltage protection; and

(iv) Time under-voltage protection;

5. Protection devices at the primary voltage level for ground fault and ground current contribution;

6. Adequate short circuit interrupting devices;

7. Reliable power sources for shunt-tripped short circuit interrupting devices; and

c. The generation facility shall not reduce the quality of service on the electric distribution system, including voltage fluctuations, excessive voltage and current harmonic content; and

d. Facilities greater than 35 kW certify that they are in compliance with IEEE Standard 1547 for harmonics;

(2) Interface with the electric distribution system according to the following requirements:

a. The system shall synchronize with the primary voltage level on the distribution grid;

b. The transformer winding connection to be used at the primary voltage interconnecting point shall be adequate to coordinate with the distribution grid;

c. The generation facility shall synchronize with the electric grid; and

d. The generation facility shall correct the power factor, if necessary;

(3) Not impair the quality of service standards maintained by the electric distribution system;

(4) Provide other protections and devices necessary, consistent with the requirements of this section, to assure safety, quality of service, reliability and power quality of the electric distribution system; and

(5) As to relays, use utility grade relays.

(b) A non-inverter based system shall be installed in accordance with the National Electrical Code, 2008, issued by the National Fire Protection Association, Quincy, Massachusetts.

(c) When seeking to interconnect with the distribution utility, the applicant shall provide the distribution utility the following:

- (1) The interconnection application form required by Puc 904.02;
- (2) Alternating current (AC) and direct current (DC) elementary and schematic diagrams describing the planned protection package; and
- (3) A one-line diagram of the net energy metering system showing how the system protection shall be wired.

(d) The customer-generator shall provide for testing of the relays of the net energy metering system once the settings have been applied to confirm that they perform the intended function.

(e) As to the testing of relays described in (d) above:

(1) The testing shall be conducted by a individual qualified for testing as described in Puc 905.04(e) and (f); and

(2) The customer shall provide the distribution utility the opportunity to:

a. Be present at and observe the testing; or

b. Conduct the testing of the relays by a qualified utility representative.

(f) If the customer and the electric distribution utility cannot agree to the interconnection requirements, they shall file with the commission for review and determination.

(g) In determining interconnection requirements for a non-inverter system, the commission shall consider safety, reliability and power quality in the context of the legislative intent of RSA 362-A:9.

## PART Puc 908 PROCEDURAL REQUIREMENTS FOR INTERCONNECTED UNITS

### Puc 908.01 Emergencies, Maintenance.

(a) The customer-generator shall, during the period it operates as a customer generator, provide the distribution utility a current telephone number(s).

(b) The distribution utility shall make arrangements for routine utility repairs or inspections that may involve the net energy metered system during normal business hours.

(c) The customer-generator shall not supply power to the electric distribution grid during any outages of the distribution system that serves the customer-generator.

(d) The customer's generating facility may be operated during outages referred to in (b)

above only with an open tie to the distribution utility.

(e) The customer's generating facility shall not:

- (1) Create an islanding situation on the grid; or
- (2) Energize a de-energized utility circuit for any reason.

Puc 908.02 Procedures for Disconnection.

(a) When an emergency condition, described in (b) below, exists and when it is necessary under the circumstances to do so, the distribution utility may disconnect the customer's net energy metered system and electric service.

(b) An emergency condition shall have occurred when the interconnection represents a condition which:

- (1) Is likely to result in imminent significant disruption of service to the distribution utility's customers;
- (2) Is imminently likely to endanger life or property;
- (3) Constitutes emergency or pre-emergency conditions on the utility system;
- (4) Constitutes a hazardous condition; or
- (5) Reveals that a protective device tampering has occurred on the customer's generation facility.

(c) The distribution utility may open the disconnect switch or disconnect the customer-generator's service, as applicable, after notice to the customer-generator has been delivered and a reasonable time to correct the condition, consistent with the conditions, has elapsed, if :

- (1) The customer-generator has failed to make available records of required verification tests and, in the case of a non-inverter interfaced system, maintenance of its protective devices;
- (2) The customer's generation facility:
  - a. Impedes the normal use of distribution utility equipment or equipment belonging to other distribution utility customers in a negative manner; or
  - b. Impedes the normal quality of service of adjoining customers in a negative



manner; or

(3) Has been modified so that it is not in compliance with Puc 900.

(d) When the customer-generator has corrected the problem and restored the system to compliance with Puc 900 and notifies the distribution utility of such compliance, the utility shall:

(1) Within 2 business days:

a. Provide written verification to the customer of their compliance; or

b. Provide written notice to the customer of the specifics of their continued non-compliance; and

(2) When the system is in compliance, reconnect or allow re-connection as soon as possible under the circumstances.

(e) The customer-generator may reconnect to the electric grid in coordination with the distribution utility, upon receipt of verification as provided in (d) above if the ECG, upon distribution utility request or otherwise, disconnected itself from the grid.

(f) If the distribution utility disconnects the customer's net metering system for one of the emergency conditions referred to in (a) above, it shall notify the customer of the disconnection:

(1) Within 24 hours of the disconnection; or

(2) As soon as possible in circumstances where a widespread emergency or other significant extenuating circumstances preclude utility personnel contacting the customer within the 24 hour period.

(g) If the emergency referred to in (a) above was not caused by the net metered system, then the distribution utility shall reconnect the system upon cessation of the emergency.

(h) Notwithstanding any special notification and re-connection requirements for customer-generators established by Puc 908, the distribution utility shall not be required to provide for special notification or re-connection for a customer-generator that differs from its usual and regular policies and protocol in a disconnection situation, if:

(1) The disconnection is not for reasons associated with the net metered system; and

(2) The distribution utility does not open the customer's disconnect switch or pull the customer's meter.

(i) If the emergency referred to in (a) above was caused by the net metered system, then the distribution utility shall communicate the nature of the problem to the customer-generator within 5 days, and attempt to resolve the issue with the customer.

(j) Within 30 days of the disconnection referred to in (h) above, the distribution utility shall file a disconnection petition with the commission if the distribution utility and the customer-generator have not reached a mutually agreed-upon resolution.

(k) Non-emergency disconnections of the net metered system by a distribution utility shall follow the same process as emergency disconnections of such systems, except that the utility shall:

(1) Give the customer-generator no less than 5 working days' prior notice of the disconnection; and

(2) Communicate in the notice to the customer-generator the reasons for the disconnection.

(l) If the net metered system is not the reason for the disconnection, the distribution utility shall reconnect the system as soon as the activity, such as line maintenance, necessitating the disconnection, ceases.

(m) When a utility disconnects the metering system of a customer-generator, the customer-generator may file a complaint with the commission at any time after disconnection.

(n) If a disconnection complaint is filed with the commission it shall hold a hearing on the matter within 30 days and rule on whether the net metering system has violated a condition necessary for it to operate.

(o) In any hearing as referred to in (m) above, the disconnecting utility shall carry the burden of proof.

(p) A customer-generator shall not re-close a disconnect device which has been opened and tagged by its distribution utility or attempt to re-install a pulled meter without the prior permission of the distribution utility, or in the event of a dispute, the commission.

(q) A customer-generator shall be allowed to disconnect the net energy metered generation from the distribution utility without prior notice in order to self-generate but shall notify the distribution utility as soon as practical following disconnection.

Puc 908.03 Distribution Utility Access to Net Metered System.

(a) The distribution utility may inspect the net energy metered system at its own expense at

a time mutually agreeable to the customer upon reasonable notice to the eligible owner-generator.

(b) Except in emergency circumstances, the distribution utility shall provide not less than 5 business days notice to the customer-generator to enter the customer-generator's property to inspect the net metered system, install additional controls or meters or conduct additional tests.

(c) A customer-generator shall not withhold allowing access to the distribution utility to inspect the net metered system, install additional controls or meters or conduct additional tests.

Puc 908.04 Complaints and Investigations.

(a) The procedures set forth in Puc 200 shall be applicable to filing and resolution of any complaint and investigation arising out of Puc 900.

(b) Any party may file with the commission a complaint or request for resolution of a dispute relating to Puc 900.

Puc 908.05 Notifying Public of Net Energy Metering.

(a) When a customer initiates an inquiry and requests information on net energy metering, the distribution utility shall provide a copy of Puc 900 to the customer and the name and telephone number of a contact person(s) at the utility and a description of net energy metering.

(b) The distribution utility shall provide to each customer in a billing insert or a billing message in the customer bill stating a brief description of the availability of net energy metering of one paragraph or more in length.

(c) The distribution utility shall provide the information described in (b) above at annual intervals.

Puc 908.06 Violations of Authorization to Interconnect.

(a) After notice and an opportunity for a hearing, the commission shall revoke, suspend, or condition the authorization for a customer to interconnect a net energy metered system, or take such other action consistent with the above that it deems provident if it finds good cause.

(b) Good cause, as referred to in (a) above shall exist if the commission finds one or more of the following:

(1) The customer was granted authority to operate based on false or misleading information supplied by the applicant which:

a. Is material; and

b. The applicant knew or should have known was false or misleading;

(2) The system was not installed or is not being operated substantially in accordance with the National Electrical Code or applicable interconnection requirements;

(3) The customer has failed to comply with the conditions of approval to operate or representations made in their filing for approval to operate; or

(4) Other conditions, consistent with (1) through (3) above, exist which the commission finds necessitates revocation, suspension or placing conditions on the authorization to interconnect.

(c) In determining the consequences of its finding in (a) above, the commission shall consider the following:

(1) The severity of the consequences resulting from the violation such that the more severe the infraction, the more severe the consequence;

(2) Mitigating circumstances, such as how quickly the customer took action to rectify the situation, how much control the customer had over the situation, and other circumstance which would tend to lessen fault; and

(3) Prior violations of Puc 900.

Puc 908.07 Utilities shall Report Number and Size of Net Energy Metered Units.

(a) Each distribution utility shall:

(1) Track the number and size of net energy metered systems on their lines;

(2) Report to the commission annually by April 1 of each year for the prior year, the following as regards net energy metered units:

a. The number of units operating;

b. The generation output rating of the units in kilowatts; and

c. The total capacity of units' generation output operating on the utility's distribution system relative to the 1.0% of annual peak energy demand limitation mandated by RSA 362-A:9,I; and

(3) Notify the commission within 10 business days when the distribution utility has reached the 1.0% of its annual peak energy demand limit mandated by RSA 362-



A:9,I.

Puc 908.08 Existing Systems Grandfathered.

(a) Net energy metering systems that have been interconnected with the distribution utility with the knowledge of the distribution utility as of the initial effective date of Puc 900 shall:

(1) Be deemed to be registered; and

(2) Not be required, due to the adoption of Puc 900, to:

a. Re-apply for interconnection pursuant to Puc 904; or

b. Upgrade to meet the applicable requirements for interconnection of Puc 905, the requirements for inverter units of Puc 906, or the requirements for non-inverters of Puc 907.

(b) The grandfathered systems referred to in (a) above shall comply with the procedural requirements for interconnected units contained in Puc 908.

(c) A customer-generator may repair his or her net energy metered system that is grandfathered under (a) above, such as by repairing relays in a non-inverter system, but if a customer-generator changes the inverter or adds to the generation output or otherwise upgrades or alters the system as provided in Puc 904.05, the customer-generator shall update the qualifications of the system as provided in Puc 904.05.

(d) The distribution utility or electricity supplier may request and the customer shall provide, as to any system grandfathered under this section, the information required in connection with the interconnection application form set forth in Puc 904.02, and the customer shall, without request, update such information as it may change.

(e) A generation system that has been interconnected with its distribution utility prior to the initial adoption of Puc 900 without the knowledge of the distribution utility shall not be grandfathered for purposes of this section.

Puc 908.09 Relationship to Other Commission Rules

(a) Unless otherwise specified, Puc 900 shall not supersede any other rule of the commission but, supplement such rules.

Puc 908.10 Transferability.

(a) An customer-generator's certificate to operate a net metered system shall transfer to the new owner when the property with the net metered system is sold or otherwise conveyed, if the new owner provides the distribution utility in writing:

(1) Any changed information provided in connection with the interconnection application described in Puc 904.02; and

(2) An agreement to operate and maintain the net metering system according to Puc 900, RSA 362-A and other applicable requirements.

(b) The distribution utility shall not deny a new owner acquiring a currently duly registered net energy metering facility, which otherwise complies with the requirements of Puc 900, the right to register, as long as the new owner complies with (a) above.

(c) The new customer-generator owner, as described in (a) and (b) above, shall notify the distribution utility of the transfer and of the applicable information required by the interconnection application in Puc 904.02.

(d) Transfers of a net metered facility as described in the section shall not be construed as exiting from the system and Puc 902.03(j) shall not apply to any such transfer.

(e) If any change or upgrade in a system would otherwise require new approval pursuant to Puc 904.05, mere ownership transfer shall not relieve the customer-generator from the requirement.

## APPENDIX

<b>Rule(s)</b>	<b>State Statute (RSA)</b>	<b>Federal Statute</b>	<b>Federal Regulation</b>
Puc 900 (other specific statute provisions implemented by specific rules are listed below)	RSA 362-A:9,V		
Puc 904.02	RSA 541-A:16,(b)		
Puc 908.03	RSA 365:8,I		
Puc 908.05	RSA 541-A:30,II		
Puc 908.06	RSA 374:15		

## Simplified Process Interconnection Application and Service Agreement

Contact Information: Date Prepared: \_\_\_\_\_

Legal Name and address of Interconnecting Customer (or, Company name, if appropriate)

Customer or Company Name (print): \_\_\_\_\_ Contact Person, if Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Alternative Contact Information (e.g., electrical contractor or coordinating company, if appropriate):

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Electrical Contractor Contact Information (if appropriate):

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

License No. \_\_\_\_\_

Facility Information:

Address of Facility: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

License No. \_\_\_\_\_

Electric Utility Company: \_\_\_\_\_ Account Number: \_\_\_\_\_ Meter Number: \_\_\_\_\_

Competitive Electric Supplier (if not supplied by local electric utility) \_\_\_\_\_ Account No. \_\_\_\_\_

Inverter Manufacturer: \_\_\_\_\_ Model Name and Number: \_\_\_\_\_ Quantity: \_\_\_\_\_

Nameplate Rating: \_\_\_\_\_ (kW) \_\_\_\_\_ (kVA) \_\_\_\_\_ (AC Volts) Single \_\_\_\_\_ or Three \_\_\_\_\_ Phase

System Design Capacity: \_\_\_\_\_ (kVA) \_\_\_\_\_ (kVA)

Net Metering: If Renewably Fueled, will the account be Net Metered? Yes \_\_\_\_\_ No \_\_\_\_\_

Prime Mover: Photovoltaic ☐ Reciprocating Engine ☐ Fuel Cell ☐ Turbine ☐ Other \_\_\_\_\_

Energy Source: Solar ☐ Wind ☐ Hydro ☐ Diesel ☐ Natural Gas ☐ Fuel Oil ☐ Other \_\_\_\_\_

UL 1741.1 (IEEE 1547.1) Listed? Yes \_\_\_\_\_ No \_\_\_\_\_

Estimated Install Date: \_\_\_\_\_ Estimated In-Service Date: \_\_\_\_\_

Customer Signature

I hereby certify that, to the best of my knowledge, all of the information provided in this application is true and I agree to the Terms and Conditions on the following page:

Interconnecting Customer Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

***Please attach any documentation provided by the inverter manufacturer describing the inverter's UL 1741 listing.***

Approval to Install Facility (For Company use only)

Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any system modifications, if required (Are system modifications required? Yes \_\_\_ No \_\_\_ To be Determined \_\_\_):



Company Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Company waives inspection/Witness Test? Yes \_\_\_\_ No \_\_\_\_**

**Application ID No.**

## Certificate of Completion for Simplified Process Interconnections

### Installation Information:

☐ Check if owner-installed

Customer or Company Name (print): \_\_\_\_\_ Contact Person, if Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Address of Facility (if different from above): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Electrical Contractor's Name (if appropriate): \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone (Daytime): \_\_\_\_\_ (Evening): \_\_\_\_\_

Facsimile Number: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

License number: \_\_\_\_\_

Date of approval to install Facility granted by the Company: \_\_\_\_\_

Application ID number: \_\_\_\_\_

### Inspection:

The system has been installed and inspected in compliance with the local Building/Electrical Code of

\_\_\_\_\_  
(City/County)

Signed (Local Electrical Wiring Inspector, or attach signed electrical inspection):

\_\_\_\_\_  
Name (printed): \_\_\_\_\_

Date: \_\_\_\_\_

As a condition of interconnection you are required to send/fax a copy of this form to (insert Company's name below):

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Mail 1: \_\_\_\_\_

Mail 2: \_\_\_\_\_

City, State ZIP: \_\_\_\_\_

Fax No.: \_\_\_\_\_