

STATE OF IOWA
DEPARTMENT OF COMMERCE
UTILITIES BOARD

<p>IN RE:</p> <p>REVIEW OF ELECTRIC INTERCONNECTION OF DISTRIBUTED GENERATION FACILITIES RULES [199 IAC CHAPTER 45]</p>	<p>DOCKET NO. RMU-2016-0003</p>
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ORDER REQUESTING COMMENTS ON PROPOSED FORMS AND PROCESSES

(Issued August 8, 2016)

On July 22, 2016, the Utilities Board (Board) issued an “Order Commencing Rule Making” in Docket No. RMU-2016-0003. The order summarized proposed changes to the Board’s chapter 45 rules regarding electric interconnection of distributed generation facilities. Attached to the order was a “Notice of Intended Action” containing all of the changes proposed by the Board. Among the proposed changes were the removal of standard forms and agreements that are currently found in rules 45.14 – 45.20 and the adoption of a pre-application and supplemental review process. The Board’s intent is to place the standard forms and agreements and the pre-application and supplemental review processes on the Board’s Web site for ease of access and adaptability.

Attached to this order are the proposed changes to the standard forms and agreements and the proposed pre-application and supplemental review processes that will be accessible on the Board’s Web site. Interested persons are encouraged to review the attached document and provide any comments addressing the

information requested and processes. The format of the forms and language may be changed for clarity; however, the Board wants to ensure that documents request the necessary information and provide a complete description of the processes.

Comments should be filed with any comments addressing the proposed amendments to chapter 45.

IT IS THEREFORE ORDERED:

Comments regarding the proposed changes to the standard forms and agreements and the proposed pre-application and supplemental review process shall be filed on or before September 6, 2016, along with the commenters statement regarding the proposed amendments to chapter 45.

UTILITIES BOARD

/s/ Geri D. Huser

/s/ Elizabeth S. Jacobs

ATTEST:

/s/ Trisha M. Quijano
Executive Secretary, Designee

/s/ Nick Wagner

Dated at Des Moines, Iowa, this 8th day of August 2016.

Pre-application Request Process

1. The utility shall designate an employee or office from which information on the application process and on the affected system can be obtained through informal requests from the applicant presenting a proposed project for a specific site, which may include multiple proposed individual interconnections in close proximity and related to one project such as a residential or commercial development proposing roof-top solar on each premise. The name, telephone number, and E-mail address of such contact employee or office shall be made available on the utility's Web site. Electric system information provided to the applicant should include relevant available system studies, interconnection studies, and other materials useful to get an understanding of an interconnection at a particular point on the utility's electric distribution system, to the extent such provision does not violate confidentiality provisions of prior agreements or critical infrastructure requirements. The utility shall comply with reasonable requests for such information.
2. In addition to the information described in section 1, which may be provided in response to an informal request, an applicant may submit a formal written request form along with a non-refundable fee of \$300 for a pre-application report on a proposed project at a specific site. The utility shall provide the pre-application data described in section 1 to the applicant within 20 business days of receipt of the completed request form and payment of the \$300 fee. The pre-application report produced by the utility is non-binding, does not confer any rights, and the applicant must still successfully apply to interconnect to the utility's system. The written pre-application report request form shall include the following information to clearly and sufficiently identify the location of the proposed point of interconnection:
 - a. Proposed distributed generation facility owner's contact information, including name, address, phone number, and E-mail address.
 - b. Project location (street address with nearby cross streets and town).
 - c. Meter number, pole number, or other equivalent information identifying proposed point of interconnection, if available.
 - d. Generator Type (e.g., solar, wind, combined heat and power, etc.).
 - e. Size (alternating current kW).
 - f. Single or three phase generator configuration.
 - g. Stand-alone generator (no onsite load, not including station service – Yes or No?).
 - h. Is new service requested? Yes or No? If there is existing service, include the customer account number, site minimum and maximum current or proposed electric loads in kW (if available) and specify if the load is expected to change.
3. Using the information provided in the pre-application report request form in section 2, the utility will identify the substation/area bus, bank or circuit likely to serve the proposed point of interconnection. This selection by the utility does

not necessarily indicate, after application of the screens and/or study, that this would be the circuit to which the distributed generation facility ultimately be connected or that interconnection will occur. The applicant must request additional pre-application reports if information about multiple points of interconnection is requested.

- a. Total capacity (in MW) of substation/area bus, bank or circuit based on normal or operating ratings likely to serve the proposed point of interconnection.
 - b. Existing aggregate generation capacity (in MW) interconnected to a substation/area bus, bank or circuit (i.e., amount of generation online) likely to serve the proposed point of interconnection.
 - c. Aggregate queued generation capacity (in MW) for a substation/area bus, bank or circuit (i.e., amount of generation in the queue) likely to serve the proposed point of interconnection.
 - d. Available capacity (in MW) of substation/area bus or bank and circuit likely to serve the proposed point of interconnection (i.e., total capacity less the sum of existing aggregate generation capacity and aggregate queued generation capacity).
 - e. Substation nominal distribution voltage and/or transmission nominal voltage if applicable.
 - f. Nominal distribution circuit voltage at the proposed point of interconnection.
 - g. Approximate circuit distance between the proposed point of interconnection and the substation.
 - h. Relevant line section(s) actual or estimated peak load and minimum load data, including daytime minimum load and absolute minimum load, when available.
 - i. Number and rating of protective devices and number and type (standard, bi-directional) of voltage regulating devices between the proposed point of interconnection and the substation/area. Identify whether the substation has a load tap changer.
 - j. Number of phases available at the proposed point of interconnection. If it is a single phase, distance from the three-phase circuit.
 - k. Limiting conductor ratings from the proposed point of interconnection to the distribution substation.
 - l. Whether the point of interconnection is located on a spot network, grid network, or radial supply.
 - m. Based on the proposed point of interconnection, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.
4. The pre-application report need only include existing data. A pre-application report request does not obligate the utility to conduct a study or other analysis of the proposed generator in the event that data is not readily available. If the utility cannot complete all or some of the pre-application report due to lack of available data, the utility shall provide the applicant with a pre-application report

that includes the data that is available. The provision of information on "available capacity" pursuant to section 3"c" does not imply that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process, and data provided in the pre-application report may become outdated at the time of the submission of the complete interconnection request. Notwithstanding any of the provisions of this section, the utility shall, in good faith, include data in the pre-application report that represents the best available information at the time of reporting.

Supplemental Review Process

1. To accept the offer of a supplemental review, the Applicant shall agree in writing, and submit a deposit for the estimated costs of the supplemental review in the amount of the utility's good faith non-binding estimate of the costs for such review, both within 15 business days of the offer. If the written agreement and deposit have not been received by the utility within that timeframe, the interconnection request shall continue to be evaluated under the applicable study process unless it is withdrawn by the Applicant.
2. The Applicant may specify the order in which the utility will complete the screens in section 4.
3. The Applicant shall be responsible for the utility's actual costs for conducting the supplemental review. The Applicant must pay any review costs that exceed the deposit within 20 business days of receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced costs, the utility will return such excess within 20 business days of the invoice without interest.
4. Within 30 business days following receipt of the deposit for a supplemental review, the utility shall:
 - a. Perform a supplemental review using the screens set forth below;
 - b. Notify in writing the Applicant of the results; and
 - c. Include with the notification, copies of the analysis and data underlying the utility's determinations under the screens.
5. Unless the Applicant provided instructions on how to respond to the failure of any of the supplemental review screens identified below at the time the Applicant accepted the offer of supplemental review, the utility shall notify the Applicant following the failure of any of the screens, or if it is unable to perform the screen in section "a" below, within two business days of making such determination to obtain the Applicant's permission to: (1) continue evaluating the proposed interconnection under this section; (2) terminate the supplemental review and continue evaluating the small generating facility; or (3) terminate the supplemental review upon withdrawal of the interconnection request by the Applicant.
 - a. Minimum Load Screen: Where 12 months of line section minimum load data (including onsite load but not station service load served by the proposed small generating facility) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate generating facility capacity on the line section must be less than 100 percent of the minimum load for all line sections bounded by automatic sectionalizing devices upstream of the proposed small generating facility. If minimum load data is not available, or cannot be calculated, estimated or determined, the utility shall include the reason(s) that it is unable to calculate, estimate or determine minimum load in its supplemental review results notification under section 4 above.

- i. The type of generation used by the proposed small generating facility will be taken into account when calculating, estimating, or determining circuit or line section minimum load relevant for the application of screen. Solar photovoltaic (PV) generation systems with no battery storage use daytime minimum load (i.e. 10 a.m. to 4 p.m. for fixed panel systems and 8 a.m. to 6 p.m. for PV systems utilizing tracking systems), while all other generation uses absolute minimum load.
 - ii. When this screen is being applied to a small generating facility that serves some station service load, only the net injection into the utility's electric system will be considered as part of the aggregate generation.
 - iii. Utility will not consider generating facility capacity known to be already reflected in the minimum load data as part of the aggregate generation for purposes of this screen.
- b. Voltage and Power Quality Screen: In aggregate with existing generation on the line section: (1) the voltage regulation on the line section can be maintained in compliance with relevant requirements under all system conditions; (2) the voltage fluctuation is within acceptable limits as defined by the Institute of Electrical and Electronics Engineers (IEEE) Standard 1453, or utility practice similar to IEEE Standard 1453; and (3) the harmonic levels meet IEEE Standard 519 limits.
- c. Safety and Reliability Screen: The location of the proposed small generating facility and the aggregate generation capacity on the line section do not create impacts to safety or reliability that cannot be adequately addressed without application of the study process. The utility shall give due consideration to the following and other factors in determining potential impacts to safety and reliability in applying this screen.
- i. Whether the line section has significant minimum load levels dominated by a small number of customers (e.g., several large commercial customers).
 - ii. Whether the load along the line section is uniform or even.
 - iii. Whether the proposed small generating facility is located in close proximity to the substation (i.e., less than 2.5 electrical circuit miles), and whether the line section from the substation to the point of interconnection is a mainline rated for normal and emergency ampacity.
 - iv. Whether the proposed small generating facility incorporates a time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time.
 - v. Whether operational flexibility is reduced by the proposed small generating facility, such that transfer of the line section(s) of the small generating facility to a neighboring distribution circuit/substation may trigger overloads or voltage issues.
 - vi. Whether the proposed small generating facility employs equipment or systems certified by a recognized standards organization to address

technical issues such as, but not limited to, islanding, reverse power flow, or voltage quality.

6. If the proposed interconnection passes the supplemental screens in sections 5"a", 5"b", and 5"c", the interconnection request shall be approved and the utility will provide the Applicant with an executable interconnection agreement within the timeframes established in sections 7 and 8 below. If the proposed interconnection fails any of the supplemental review screens and the Applicant does not withdraw its interconnection request, it shall continue to be evaluated under the Level 4 study process consistent with 199 IAC 45.12.
7. If the proposed interconnection passes the supplemental screens in sections 5"a", 5"b", and 5"c" above and does not require construction of facilities by the utility on its own system, the interconnection agreement shall be provided within ten business days after the notification of the supplemental review results.
8. If interconnection facilities or minor modifications to the utility's system are required for the proposed interconnection to pass the supplemental screens in sections 5"a", 5"b", and 5"c" above, and the Applicant agrees to pay for the modifications to the utility's electric system, the interconnection agreement, along with a non-binding good faith estimate for the interconnection facilities and/or minor modifications, shall be provided to the Applicant within 15 business days after receiving written notification of the supplemental review results.
9. If the proposed interconnection would require more than interconnection facilities or minor modifications to the utility's system to pass the supplemental screens in sections 5"a", 5"b", and 5"c" above, the utility shall notify the Applicant at the same time it notifies the Applicant with the supplemental review results, that the interconnection request shall be evaluated under the Level 4 study process unless the Applicant withdraws its small generating facility.

~~199—45.14(476) Appendix A—Level 1 standard application form and distributed generation interconnection agreement.~~

LEVEL 1
STANDARD INTERCONNECTION REQUEST APPLICATION FORM AND
DISTRIBUTED GENERATION INTERCONNECTION AGREEMENT

Interconnection Request Application Form and
Conditional Agreement to Interconnect
(For Lab-Certified Inverter-Based Distributed Generation Facilities ~~40~~20 kVA or
Smaller)

AN APPLICATION FEE OF ~~\$125~~50.00 MUST BE SUBMITTED WITH THE
APPLICATION

(If the utility performs a Witness Test as specified under Iowa Utilities Board rule
199 IAC 45.5(10), the utility may charge the interconnected customer a cost-based
fee of no more than \$125.00.)

Interconnection Applicant Contact Information

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

Alternate Contact Information (if different from applicant)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

Equipment Contractor

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

License Number (if applicable): _____

Active License? (if applicable) _____ Yes _____ No

Electrical Contractor (if different from Equipment Contractor)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

License Number (if applicable): _____

Active License? (if applicable) _____ Yes _____ No

Does this application require a cluster study _____ Yes _____ No

Is the interconnection customer requesting net metering in accordance with Iowa Utilities Board rule 199 IAC 15.11(5) and the utility's net metering or net billing tariff? _____ Yes _____ No

Intent of Generation

_____ Net Metering (Unit will operate in parallel and will export power to utility pursuant to Iowa Utilities Board rule 199 IAC 15.11(5) and the utility's net metering or net billing tariff)

_____ Self-Use and Sales to the Utility (Unit will operate in parallel and may export and sell excess power to utility pursuant to Iowa Utilities Board rule 199 IAC 15.5 and the utility's tariff)

_____ Other (Please explain): _____

Distributed Generation Facility ("Facility") Information

Facility Address: _____

City: _____ State: _____ Zip: _____

Utility serving Facility site: _____

Account Number of Facility site (existing utility customers): _____

Inverter Manufacturer: _____ Model: _____

Is the inverter lab-certified as that term is defined in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation (199 IAC 45.1)?

_____ Yes _____ No

(If yes, attach manufacturer's technical specifications and label information from a nationally recognized testing laboratory.)

Generation Facility Nameplate Rating: __ (kW) _____ (kVA) _____ (AC Volts)

Energy Source: Wind _____ Solar _____ Biomass _____ Hydro _____ Diesel _____
Natural Gas _____ Fuel Oil _____ Other _____

Converter Type: Wind Turbine _____ Photovoltaic Cell _____ Fuel Cell _____
Reciprocating Engine _____ Other: _____

Commissioning Test Date: _____

(If the commissioning test date changes, the interconnection customer must inform the utility as soon as it is aware of the changed date.)

Insurance Disclosure

The attached terms and conditions contain provisions related to liability and indemnification and should be carefully considered by the interconnection customer. The interconnection customer shall carry general liability insurance coverage, such as, but not limited to, homeowner's insurance.

Other Facility Information

One Line Diagram - A basic drawing of an electric circuit in which one or more conductors are represented by a single line and each electrical device and major component of the installation, from the generator to the point of interconnection, are noted by symbols.

One Line Diagram attached: _____ Yes

Plot Plan - A map showing the distributed generation facility's location in relation to streets, alleys, or other geographic markers.

Plot Plan attached: _____ Yes

Customer Signature

I hereby certify that: (1) I have read and understand the terms and conditions, which are attached hereto by reference; (2) I hereby agree to comply with the attached terms and conditions; and (3) to the best of my knowledge, all of the information provided in this application request form is complete and true.

Applicant Signature: _____

Title: _____ Date: _____

.....

This Application Form and Interconnection Agreement is comprised of: 1) the Level 1 Standard-Interconnection Request Application Form and Distributed Generation Interconnection Agreement; 2) the Attachment of Terms and Conditions for Interconnection; and 3) the Certificate of Completion.

NOTE: If the Certificate of Completion is not completed and returned to the utility within 12 months following the utility's dated conditional agreement to interconnect below, this Application Form and Interconnection Agreement will automatically terminate and be of no further force and effect.

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Conditional Agreement to Interconnect Distributed Generation Facility

Receipt of the application fee is acknowledged and, by its signature below, the utility has determined the interconnection request is complete. Interconnection of the distributed generation facility is conditionally approved contingent upon the attached terms and conditions of this Agreement, the return of the attached Certificate of Completion, duly executed verification of electrical inspection and successful witness test.

Utility Signature: _____ Date: _____

Name: _____ Title: _____

ATTACHMENT

Level 1: ~~Standard~~ Distributed Generation Interconnection Agreement

Terms and Conditions for Interconnection

- 1) Construction of the Distributed Generation Facility. The interconnection customer may proceed to construct (including operational testing not to exceed 2 hours) the distributed generation facility, once the conditional Agreement to interconnect a distributed generation facility has been signed by the utility.

- 2) Final Interconnection and Operation. The interconnection customer may operate the distributed generation facility and interconnect with the utility's electric distribution system after all of the following have occurred:
 - a) Electrical Inspection: Upon completing construction, the interconnection customer shall cause the distributed generation facility to be inspected by the local electrical inspection authority, who shall establish that the distributed generation facility meets local code requirements.
 - b) Certificate of Completion: The interconnection customer shall provide the utility with a copy of the Certificate of Completion with all relevant and necessary information fully completed by the interconnection customer, as well as an inspection form from the local electrical inspection authority demonstrating that the distributed generation facility passed inspection.
 - c) The utility has completed its witness test as per the following:
 - i) The interconnection customer shall provide the utility at least 15 business days' notice of the planned commissioning test for the distributed generation facility. Within ten business days after the commissioning test, the utility may, upon reasonable notice and at a mutually convenient time, conduct a witness test of the distributed generation facility to ensure that all equipment has been appropriately installed and operating as designed and in accordance with the requirements of IEEE 1547.
 - ii) If the utility does not perform the witness test within the ten business days after the commissioning test or such other time as is mutually agreed to by the Parties, the witness test is deemed waived, unless the utility cannot do so for good cause. In these cases, upon utility request, the interconnection customer shall agree to another date for the test within ten business days after the original scheduled date.

- 3) IEEE 1547. The distributed generation facility shall be installed, operated and tested in accordance with the requirements of The Institute of Electrical and Electronics Engineers, Inc. (IEEE), 3 Park Avenue, New York, NY 10016-5997, Standard 1547 (2003) "Standard for Interconnecting Distributed Resources with Electric Power Systems," as well as any applicable federal, state, or local laws, regulations, codes, ordinances, orders, or similar directives of any government or other authority having jurisdiction.

4) Access. The utility must have access to the ~~isolation-disconnection~~ device or disconnect switch and metering equipment of the distributed generation facility at all times. When practical, the utility shall provide notice to the customer prior to using its right of access.

5) Metering. Any required metering shall be installed pursuant to the utility's metering rules filed with the Iowa Utilities Board under subrule 199 IAC 20.2(5).

6) Disconnection. The utility may disconnect the distributed generation facility upon any of the following conditions, but must reconnect the distributed generation facility once the condition is cured:

- a) For scheduled outages, provided that the distributed generation facility is treated in the same manner as utility's load customers;
- b) For unscheduled outages or emergency conditions;
- c) If the distributed generation facility does not operate in a manner consistent with this Agreement or the applicable requirements of 199 IAC chapter 15 or 45;
- d) Improper installation or failure to pass the witness test;
- e) If the distributed generation facility is creating a safety, reliability, or power quality problem;
- f) The interconnection equipment used by the distributed generation facility is de-listed by the Nationally Recognized Testing Laboratory that provided the listing at the time the interconnection was approved;
- g) Unauthorized modification of the interconnection facilities or the distributed generation facility; or
- h) Unauthorized connection to the utility's electric system.

7) Indemnification. The interconnection customer shall indemnify and defend the utility and the utility's directors, officers, employees, and agents from all claims, damages and expenses, including reasonable attorney's fees, to the extent resulting from the interconnection customer's negligent installation, operation, modification, maintenance, or removal of its distributed generation facility or interconnection facilities, or the interconnection customer's willful misconduct or breach of this Agreement. The utility shall indemnify and defend the interconnection customer and the interconnection customer's directors, officers, employees, and agents from all claims, damages, and expenses, including reasonable attorney's fees, to the extent resulting from the utility's negligent installation, operation, modification, maintenance, or removal of its interconnection facilities or electric distribution system, or the utility's willful misconduct or breach of this Agreement.

8) Insurance. The interconnection customer shall provide the utility with proof that it has a current homeowner's insurance policy or other general liability policy.

9) Limitation of Liability. Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be

limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever, provided that in no event shall death, bodily injury or third-party claims be construed as indirect or consequential damages.

10) Termination. This Agreement will remain in effect until terminated and may be terminated under the following conditions:

- a) By interconnection customer - The interconnection customer may terminate this interconnection agreement by providing written notice to the utility. If the interconnection customer ceases operation of the distributed generation facility, the interconnection customer must notify the utility.
- b) By the utility - The utility may terminate this Agreement without liability to the interconnection customer if the interconnection customer fails to remedy a violation of terms of this Agreement within 30 calendar days after notice, or such other date as may be mutually agreed to in writing prior to the expiration of the 30 calendar day remedy period. The termination date may be no less than 30 calendar days after the interconnection customer receives notice of its violation from the utility.

11) Modification of Distributed Generation Facility. The interconnection customer must receive written authorization from the utility before making any changes to the distributed generation facility that could affect the utility's distribution system. If the interconnection customer makes such modifications without the utility's prior written authorization, the utility shall have the right to disconnect the distributed generation facility.

12) Permanent Disconnection In the event the Agreement is terminated, the utility shall have the right to disconnect its facilities or direct the interconnection customer to disconnect its distributed generation facility.

13) Disputes. Each Party agrees to attempt to resolve all disputes regarding the provisions of this Agreement that cannot be resolved between the two Parties pursuant to the dispute resolution provisions found in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.12).

14) Governing Law, Regulatory Authority, and Rules. The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of Iowa. Nothing in this Agreement is intended to affect any other agreement between the utility and the interconnection customer.

15) Survival Rights. This Agreement shall remain in effect after termination to the extent necessary to allow or require either Party to fulfill rights or obligations that arose under the Agreement.

16) Assignment/Transfer of Ownership of the Distributed Generation Facility. This Agreement shall terminate upon the transfer of ownership of the distributed generation facility to a new owner unless the transferring owner assigns the Agreement to the new owner, the new owner agrees in writing to the terms of this Agreement, and the transferring owner so notifies the utility in writing prior to the transfer of ownership.

17) Definitions. Any term used herein and not defined shall have the same meaning as the defined terms used in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1).

18) Notice. The Parties may mutually agree to provide notices, demands, comments, or requests by electronic means such as e-mail. Absent agreement to electronic communication, or unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement shall be deemed properly given when receipt is confirmed after notices are delivered in person, delivered by recognized national courier service, or sent by first-class mail, postage prepaid, return receipt requested, to the person specified below:

If Notice is to Interconnection Customer:

Use the contact information provided in the interconnection customer's application. The interconnection customer is responsible for notifying the utility of any change in the contact party information, including change of ownership.

If Notice is to Utility:

Use the contact information provided below. The utility is responsible for notifying the interconnection customer of any change in the contact party information.

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

19. Interruptions. The utility is not responsible for any lost opportunity or other costs incurred by the interconnection customer as a result of an interruption of service.

CERTIFICATION OF COMPLETION

(To be completed and returned to the utility when installation is complete and final electric inspector approval has been obtained – Use contact information provided on the utility’s Web page for generator interconnection to obtain mailing address/facsimile number/E-mail address)

Interconnection Customer Information

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address : _____

Installer: _____ Check if owner-installed _____

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

Final Electric Inspection and Interconnection Customer Signature

The distributed generation facility is complete and has been approved by the local electric inspector having jurisdiction. A signed copy of the electric inspector’s form indicating final approval is attached. The interconnection customer acknowledges that it shall not operate the distributed generation facility until receipt of the final acceptance and approval by the utility as provided below.

Signed: _____ Date: _____
(Signature of interconnection customer)

Printed Name: _____

Check if copy of signed electric inspection form is attached: _____

Check if copy of as-built documents are attached (projects larger than 20 40 kVA only): _____



Acceptance and Final Approval for Interconnection (for utility use only)

The interconnection agreement is approved and the distributed generation facility is approved for interconnected operation upon the signing and return of this Certificate of Completion by utility:

Electric Distribution Company waives Witness Test? (Initial)

Yes (____) No (____)

If the utility performs a Witness Test as specified under Iowa Utilities Board rule 199 IAC 45.5(10), the utility may charge the interconnected customer a cost-based fee of no more than \$125.00.

If not waived, date of successful Witness Test: _____ Passed: (Initial) (____)

Utility Signature: _____ Date: _____

Printed Name: _____ Title: _____

LEVELS 2 TO 4:
STANDARD-INTERCONNECTION REQUEST APPLICATION FORM
(For Distributed Generation Facilities 10 MVA or Less)

Interconnection Customer Contact Information

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

Alternate Contact Information (if different from applicant)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

Facility Address (if different from above): _____

City: _____ State: _____ Zip: _____

Utility serving Facility site: _____

Account Number of Facility site (existing utility customers): _____

Inverter Manufacturer: _____ Model: _____

Equipment Contractor

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

Electrical Contractor (if different from Equipment Contractor):

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime): _____ (Evening) _____

Facsimile Number: _____ E-mail Address: _____

License Number (if applicable): _____

Active License? (if applicable) _____ Yes _____ No

Electric Service Information for Customer Facility where Generator will be Interconnected

Capacity: _____ (Amps) Voltage: _____ (Volts)

Type of Service: _____ Single Phase _____ Three Phase

If 3-Phase Transformer, Indicate Type:

Primary Winding _____ Wye _____ Delta

Secondary Winding _____ Wye _____ Delta

Transformer Size: _____ Impedance: _____

Does this application require a cluster study _____ Yes _____ No

Intent of Generation

_____ Offset Load (Unit will operate in parallel, but will not export power to utility.)

_____ Net Metering (Unit will operate in parallel and will export power to utility pursuant to Iowa Utilities Board rule 199 IAC 15.124(5) and the utility's net metering or net billing tariff.)

_____ Self-Use and Sales to the Utility (Unit will operate in parallel and may export and sell excess power to utility pursuant to Iowa Utilities Board rule 199 IAC 15.5 and the utility's tariff.)

_____ Wholesale Market Transaction (Unit will operate in parallel and participate in MISO, SPP, or other wholesale power markets pursuant to separate requirements and agreements with MISO, SPP, or other transmission providers, and applicable rules of the Federal Energy Regulatory Commission.)

_____ Back-Up Generation (Units that temporarily operate in parallel with the electric distribution system for more than 100 milliseconds.)

Note: Back-Up units that do not operate in parallel for more than 100 milliseconds do not need an interconnection agreement.

Generator & Prime Mover Information

Energy Source (Hydro, Wind, Solar, Process Byproduct, Biomass, Oil, Natural Gas, Coal, etc.): _____

Energy Converter Type (Wind Turbine, Photovoltaic Cell, Fuel Cell, Steam Turbine, etc.): _____

Generator Size: _____ kW or _____ kVA Number of Units: _____
Total Capacity: _____ kW or _____ kVA

Generator Type (Check one):
_____ Induction _____ Inverter _____ Synchronous _____ Other: _____

Requested Procedure Under Which to Evaluate Interconnection Request

Please indicate below which review procedure applies to the interconnection request. The review procedure used is subject to confirmation by the utility.

_____ Level 2 - Lab-certified interconnection equipment with an aggregate electric nameplate capacity less than or equal to 2 MVA for non-inverter based systems or inverter-based systems as defined in 199 IAC 45.8(2)(b). Lab-certified is defined in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1). (Application fee is ~~\$250~~ plus \$1.00 per kVA. If the utility performs a Witness Test as specified under Iowa Utilities Board rule 199 IAC 45.5(10), the utility may charge the interconnected customer a cost-based fee of no more than \$125.00.)

_____ Level 3 - Distributed generation facility does not export power. Nameplate capacity rating is less than or equal to 50 kVA if connecting to area network or less than or equal to 10 MVA if connecting to a radial distribution feeder. (Application fee amount is \$500 plus \$2.00 per kVA.)

_____ Level 4 - Nameplate capacity rating is less than or equal to 10 MVA and the distributed generation facility does not qualify for a Level 1, Level 2, or Level 3 review, or the distributed generation facility has been reviewed but not approved under a Level 1, Level 2, or Level 3 review. (Application fee amount is \$1,000 plus \$2.00 per kVA, to be applied toward any subsequent studies related to this application.)

Note: Descriptions for interconnection review categories do not list all criteria that must be satisfied. For a complete list of criteria, please refer to Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45).

Distributed Generation Facility Information:

Commissioning Test Date: _____

List interconnection components/systems to be used in the distributed generation facility that are lab-certified.

Component/System	NRTL Providing Label & Listing
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Please provide copies of manufacturer brochures or technical specifications.

Energy Production Equipment/Inverter Information:

____ Synchronous ____ Induction ____ Inverter ____ Other: _____

Rating: _____ kW Rating: _____ kVA

Rated Voltage: _____ Volts

Rated Current: _____ Amps

System Type Tested (Total System): ____ Yes ____ No; attach product literature

For Synchronous Machines:

Note: Contact utility to determine if all the information requested in this section is required for the proposed distributed generation facility.

Manufacturer: _____

Model No.: _____ Version No.: _____

Submit copies of the Saturation Curve and the Vee Curve

____ Salient ____ Non-Salient

Torque: _____ lb-ft Rated RPM: _____ Field Amperes: _____ at rated generator voltage and current and % PF over-excited

Type of Exciter: _____

Output Power of Exciter: _____

Type of Voltage Regulator: _____

Locked Rotor Current: _____ Amps Synchronous Speed: _____ RPM

Winding Connection: _____ Min. Operating Freq./Time: _____

Generator Connection: _____ Delta _____ Wye _____ Wye Grounded

Direct-axis Synchronous Reactance (Xd) _____ ohms

Direct-axis Transient Reactance: (X'd) _____ ohms

Direct-axis Sub-transient Reactance: ($X'd$) _____ ohms
Negative Sequence Reactance: _____ ohms
Zero Sequence Reactance: _____ ohms
Neutral Impedance or Grounding Resister (if any): _____ ohms

For Induction Machines:

Note: Contact utility to determine if all the information requested in this section is required for the proposed distributed generation facility.

Manufacturer: _____
Model No.: _____ Version No.: _____
Locked Rotor Current: _____ Amps
Rotor Resistance (R_r): _____ ohms Exciting Current: _____ Amps
Rotor Reactance (X_r): _____ ohms Reactive Power Required: _____
Magnetizing Reactance (X_m): _____ ohms _____ VARs (No Load)
Stator Resistance (R_s): _____ ohms _____ VARs (Full Load)
Stator Reactance (X_s): _____ ohms
Short Circuit Reactance (X_d): _____ ohms
Phases: _____ Single _____ Three-Phase
Frame Size: _____ Design Letter: _____ Temp. Rise: _____ °C.

Reverse Power Relay Information (Level 3 Review Only):

Manufacturer: _____
Relay Type: _____ Model Number: _____
Reverse Power Setting: _____
Reverse Power Time Delay (if any): _____

Additional Information for Inverter-Based Facilities

Inverter Information:

Manufacturer: _____ Model: _____
Type: _____ Forced Commutated _____ Line Commutated
Rated Output: _____ Watts _____ Volts
Efficiency: _____ % Power Factor: _____ %
Inverter UL1741 Listed: _____ Yes _____ No

DC Source/Prime Mover

Rating: _____ kW Rating: _____ kVA
Rated Voltage: _____ Volts
Open Circuit Voltage (if applicable): _____ Volts
Rated Current: _____ Amps
Short Circuit Current (if applicable): _____ Amps

Other Facility Information:

One Line Diagram - A basic drawing of an electric circuit in which one or more conductors are represented by a single line and each electrical device and major component of the installation, from the generator to the point of interconnection, are noted by symbols.

One Line Diagram attached: _____ Yes

Plot Plan - A map showing the distributed generation facility's location in relation to streets, alleys, or other geographic markers.

Plot Plan attached: _____ Yes

Customer Signature:

I hereby certify that all the information provided in this Interconnection Request Application Form is true.

Applicant Signature: _____

Title: _____ Date: _____

An application fee is required before the application can be processed. Please verify that the appropriate fee is included with the application:

Amount: _____

Utility Acknowledgement:

Receipt of the application fee is acknowledged and this interconnection request is complete.

Utility Signature: _____

Date: _____

Printed Name: _____

Title: _____

~~199—45.17(476) Appendix D—Levels 2 to 4: standard distributed generation interconnection agreement.~~

LEVELS 2 TO 4:

STANDARD-DISTRIBUTED GENERATION INTERCONNECTION AGREEMENT
(For Distributed Generation Facilities with a Capacity of 10 MVA or Less)

This agreement ("Agreement") is made and entered into this ____ day of _____, by and between _____ ("interconnection customer"), as an individual person, or as a _____ organized and existing under the laws of the State of _____, and _____, ("utility"), a _____ existing under the laws of the State of Iowa. Interconnection customer and utility each may be referred to as a "Party," or collectively as the "Parties."

Recitals:

Whereas, interconnection customer is proposing to install or direct the installation of a distributed generation facility, or is proposing a generating capacity addition to an existing distributed generation facility, consistent with the interconnection request application form completed by interconnection customer on _____; and

Whereas, the interconnection customer will operate and maintain, or cause the operation and maintenance of, the distributed generation facility; and

Whereas, interconnection customer desires to interconnect the distributed generation facility with utility's electric distribution system.

Now, therefore, in consideration of the premises and mutual covenants set forth in this Agreement, the Parties covenant and agree as follows:

Article 1. Scope and Limitations of Agreement

- 1.1 This Agreement shall be used for all approved interconnection requests for distributed generation facilities that fall under Levels 2, 3, and 4 according to the procedures set forth in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45).
- 1.2 This Agreement governs the terms and conditions under which the distributed generation facility will interconnect to, and operate in parallel with, the utility's electric distribution system.
- 1.3 This Agreement does not constitute an agreement to purchase or deliver the interconnection customer's power.
- 1.4 Nothing in this Agreement is intended to affect any other agreement

between the utility and the interconnection customer.

1.5 Terms used in this Agreement are defined in Attachment 1 hereto or in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1) unless otherwise noted.

1.6 Responsibilities of the Parties

1.6.1 The Parties shall perform all obligations of this Agreement in accordance with all applicable laws, regulations, codes, ordinances, orders, or similar directives of any government or other authority having jurisdiction.

1.6.2 The utility shall construct, own, operate, and maintain its interconnection facilities in accordance with this Agreement.

1.6.3 The interconnection customer shall construct, own, operate, and maintain its distributed generation facility and interconnection facilities in accordance with this Agreement.

1.6.4 Each Party shall operate, maintain, repair, and inspect, and shall be fully responsible for, the facilities that it now owns or subsequently may own unless otherwise specified in the attachments to this Agreement. Each Party shall be responsible for the safe installation, maintenance, repair, and condition of its respective lines and appurtenances on its respective sides of the point of interconnection.

1.6.5 The interconnection customer agrees to design, install, maintain, and operate its distributed generation facility so as to minimize the likelihood of causing an adverse system impact on the electric distribution system or any other electric system that is not owned or operated by the utility.

1.7 Parallel Operation Obligations

Once the distributed generation facility has been authorized to commence parallel operation, the interconnection customer shall abide by all operating procedures established in IEEE Standard 1547 and any other applicable laws, statutes or guidelines, including those specified in Attachment 4 of this Agreement.

1.8 Metering

The interconnection customer shall be responsible for the cost to purchase, install, operate, maintain, test, repair, and replace metering and data acquisition equipment specified in Attachments 5 and 6 of this Agreement.

1.9 Reactive Power

- 1.9.1 Interconnection customers with a distributed generation facility larger than or equal to 1 MVA shall design their distributed generation facilities to maintain a power factor at the point of interconnection between .95 lagging and .95 leading at all times. Interconnection customers with a distributed generation facility smaller than 1 MVA shall design their distributed generation facility to maintain a power factor at the point of interconnection between .90 lagging and .90 leading at all times.
- 1.9.2 Any utility requirements for meeting a specific voltage or specific reactive power schedule as a condition for interconnection shall be clearly specified in Attachment 4. Under no circumstance shall the utility's additional requirements for voltage or reactive power schedules be outside of the agreed-upon operating parameters defined in Attachment 4.
- 1.9.3 If the interconnection customer does not operate the distributed generation facility within the power factor range specified in Attachment 4, or does not operate the distributed generation facility in accordance with a voltage or reactive power schedule specified in Attachment 4, the interconnection customer is in default, and the terms of Article 6.5 apply.

1.10 Standards of Operations

The interconnection customer must obtain all certifications, permits, licenses, and approvals necessary to construct, operate, and maintain the facility and to perform its obligations under this Agreement. The interconnection customer is responsible for coordinating and synchronizing the distributed generation facility with the utility's system. The interconnection customer is responsible for any damage that is caused by the interconnection customer's failure to coordinate or synchronize the distributed generation facility with the electric distribution system. The interconnection customer agrees to be primarily liable for any damages resulting from the continued operation of the distributed generation facility after the utility ceases to energize the line section to which the distributed generation facility is connected. In Attachment 4, the utility shall specify the shortest reclose time setting for its protection equipment that could affect the distributed generation facility. The utility shall notify the interconnection customer at least ten business days prior to adopting a faster reclose time on any automatic protective equipment, such as a circuit breaker or line recloser, that might affect the distributed generation facility.

Article 2. Inspection, Testing, Authorization, and Right of Access

2.1 Equipment Testing and Inspection

The interconnection customer shall test and inspect its distributed generation facility including the interconnection equipment prior to interconnection in accordance with IEEE Standard 1547 (2003) and IEEE Standard 1547.1 (2005). The interconnection customer shall not operate its distributed generation facility in parallel with the utility's electric distribution system without prior written authorization by the utility as provided for in Articles 2.1.1-2.1.3.

2.1.1 The utility shall perform a witness test after construction of the distributed generation facility is completed, but before parallel operation, unless the utility specifically waives the witness test. The interconnection customer shall provide the utility at least 15 business days' notice of the planned commissioning test for the distributed generation facility. If the utility performs a witness test at a time that is not concurrent with the commissioning test, it shall contact the interconnection customer to schedule the witness test at a mutually agreeable time within ten business days after the scheduled commissioning test designated on the application. If the utility does not perform the witness test within ten business days after the commissioning test, the witness test is deemed waived unless the Parties mutually agree to extend the date for scheduling the witness test, or unless the utility cannot do so for good cause, in which case, the Parties shall agree to another date for scheduling the test within ten is not acceptable to the utility, the interconnection customer has 30 business days to address and resolve any deficiencies. This time period may be extended upon agreement in writing between the utility and the interconnection customer. If the interconnection customer fails to address and resolve the deficiencies to the satisfaction of the utility, the applicable cure provisions of Article 6.5 shall apply. The interconnection customer shall, if requested by the utility, provide a copy of all documentation in its possession regarding testing conducted pursuant to IEEE Standard 1547.1.

2.1.2 If the interconnection customer conducts interim testing of the distributed generation facility prior to the witness test, the interconnection customer shall obtain permission from the utility before each occurrence of operating the distributed generation facility in parallel with the electric distribution system. The utility may, at its own expense, send qualified personnel to the distributed generation facility to observe such interim testing, but it cannot mandate that these tests be considered in the final witness test. The utility is not required to observe the interim testing or precluded from requiring the tests be repeated at the final witness test.

2.1.3 After the distributed generation facility passes the witness test, the utility shall affix an authorized signature to the certificate of completion and return it to the interconnection customer approving the interconnection and authorizing parallel operation. The authorization shall not be conditioned or delayed.

2.2 Commercial Operation

The interconnection customer shall not operate the distributed generation facility, except for interim testing as provided in Article 2.1, until such time as the certificate of completion is signed by all Parties.

2.3 Right of Access

The utility must have access to the ~~isolation~~ disconnection device or disconnect switch and metering equipment of the distributed generation facility at all times. When practical, the utility shall provide notice to the customer prior to using its right of access.

Article 3. Effective Date, Term, Termination, and Disconnection

3.1 Effective Date

This Agreement shall become effective upon execution by all Parties.

3.2 Term of Agreement

This Agreement shall become effective on the effective date and shall remain in effect unless terminated in accordance with Article 3.3 of this Agreement.

3.3 Termination

3.3.1 The interconnection customer may terminate this Agreement at any time by giving the utility 30 calendar days' prior written notice.

3.3.2 Either Party may terminate this Agreement after default pursuant to Article 6.5.

3.3.3 The utility may terminate, upon 60 calendar days' prior written notice, for failure of the interconnection customer to complete construction of the distributed generation facility within 12 months after the in-service date as specified by the Parties in Attachment 2, which may be extended by mutual written agreement between the Parties prior to the expiration of the 12-month period.

- 3.3.4 The utility may terminate this Agreement, upon 60 calendar days' prior written notice, if the interconnection customer has abandoned, cancelled, permanently disconnected or stopped development, construction, or operation of the distributed generation facility, or if the interconnection customer fails to operate the distributed generation facility in parallel with the utility's electric system for three consecutive years.
- 3.3.5 Upon termination of this Agreement, the distributed generation facility will be disconnected from the utility's electric distribution system. Terminating this Agreement does not relieve either Party of its liabilities and obligations that are owed or continuing when the Agreement is terminated.
- 3.3.6 If the Agreement is terminated, the interconnection customer loses its position in the interconnection review order.

3.4 Temporary Disconnection

A Party may temporarily disconnect the distributed generation facility from the electric distribution system in the event one or more of the following conditions or events occurs:

- 3.4.1 Emergency conditions - Shall mean any condition or situation: (1) that in the judgment of the Party making the claim is likely to endanger life or property; or (2) that the utility determines is likely to cause an adverse system impact, or is likely to have a material adverse effect on the utility's electric distribution system, interconnection facilities or other facilities, or is likely to interrupt or materially interfere with the provision of electric utility service to other customers; or (3) that is likely to cause a material adverse effect on the distributed generation facility or the interconnection equipment. Under emergency conditions, the utility or the interconnection customer may suspend interconnection service and temporarily disconnect the distributed generation facility from the electric distribution system without giving notice to the other Party, provided that it gives notice as soon as practicable thereafter. The utility must notify the interconnection customer when it becomes aware of any conditions that might affect the interconnection customer's operation of the distributed generation facility. The interconnection customer shall notify the utility when it becomes aware of any condition that might affect the utility's electric distribution system. To the extent information is known, the notification shall describe the condition, the extent of the damage or deficiency, the expected effect on the operation of both Parties' facilities and operations, its anticipated duration, and the necessary corrective action.

- 3.4.2 Scheduled maintenance, construction, or repair - the utility may interrupt interconnection service or curtail the output of the distributed generation facility and temporarily disconnect the distributed generation facility from the utility's electric distribution system when necessary for scheduled maintenance, construction, or repairs on utility's electric distribution system. To the extent possible, the utility shall provide the interconnection customer with notice five business days before an interruption. The utility shall coordinate the reduction or temporary disconnection with the interconnection customer; however, the interconnection customer is responsible for out-of-pocket costs incurred by the utility for deferring or rescheduling maintenance, construction, or repair at the interconnection customer's request.
- 3.4.3 Forced outages - The utility may suspend interconnection service to repair the utility's electric distribution system. The utility shall provide the interconnection customer with prior notice, if possible. If prior notice is not possible, the utility shall, upon written request, provide the interconnection customer with written documentation, after the fact, explaining the circumstances of the disconnection.
- 3.4.4 Adverse system impact - The utility must provide the interconnection customer with written notice of its intention to disconnect the distributed generation facility, if the utility determines that operation of the distributed generation facility creates an adverse system impact. The documentation that supports the utility's decision to disconnect must be provided to the interconnection customer. The utility may disconnect the distributed generation facility if, after receipt of the notice, the interconnection customer fails to remedy the adverse system impact within 12 days, unless emergency conditions exist, in which case, the provisions of Article 3.4.1 apply. The utility may continue to leave the generating facility disconnected until the adverse system impact is corrected to the satisfaction of both the utility and the adversely-impacted customer.
- 3.4.5 Modification of the distributed generation facility - The interconnection customer must receive written authorization from the utility prior to making any change to the distributed generation facility, other than a minor equipment modification. If the interconnection customer modifies its facility without the utility's prior written authorization, the utility has the right to disconnect the distributed generation facility until such time as the utility concludes the modification poses no threat to the safety or reliability of its electric distribution system.
- 3.4.6 Unauthorized connection to the utility's electric distribution system.

- 3.4.7 Failure of the distributed generation facility to operate in accordance with this Agreement or the applicable requirements of 199 IAC chapter 15 or 45.
- 3.4.8 The utility is not responsible for any lost opportunity or other costs incurred by interconnection customer as a result of an interruption of service under Article 3.

Article 4. Cost Responsibility for Interconnection Facilities and Distribution Upgrades

4.1 Interconnection Facilities

- 4.1.1 The interconnection customer shall pay for the cost of the interconnection facilities itemized in Attachment 3. The utility shall identify the additional interconnection facilities necessary to interconnect the distributed generation facility with the utility's electric distribution system, the cost of those facilities, and the time required to build and install those facilities, as well as an estimated date of completion of the building or installation of those facilities.
- 4.1.2 The interconnection customer is responsible for its expenses, including overheads, associated with owning, operating, maintaining, repairing, and replacing its interconnection equipment.

4.2 Distribution Upgrades

The utility shall design, procure, construct, install, and own any distribution upgrades. The actual cost of the distribution upgrades, including overheads, shall be directly assigned to the interconnection customer whose distributed generation facility caused the need for the distribution upgrades.

Article 5. Billing, Payment, Milestones, and Financial Security

- 5.1 Billing and Payment Procedures and Final Accounting (Applies to additional reviews conducted under a Level 2 review and Level 4 reviews)
 - 5.1.1 The utility shall bill the interconnection customer for the design, engineering, construction, and procurement costs of utility-provided interconnection facilities and distribution upgrades contemplated by this Agreement as set forth in Attachment 3. The billing shall occur on a monthly basis, or as otherwise agreed to between the Parties. The interconnection customer shall pay each billing invoice within 30 calendar days after receipt, or as otherwise agreed to between the Parties, if a balance due is showing after any customer deposit funds have been expended.

5.1.2 Within 90 calendar days after completing the construction and installation of the utility's interconnection facilities and distribution upgrades described in Attachments 2 and 3 to this Agreement, the utility shall provide the interconnection customer with a final accounting report of any difference between: (1) the actual cost incurred to complete the construction and installation of the utility's interconnection facilities and distribution upgrades; and (2) the interconnection customer's previous deposit and aggregate payments to the utility for the interconnection facilities and distribution upgrades. If the interconnection customer's cost responsibility exceeds its previous deposit and aggregate payments, the utility shall invoice the interconnection customer for the amount due and the interconnection customer shall make payment to the utility within 30 calendar days. If the interconnection customer's previous deposit and aggregate payments exceed its cost responsibility under this Agreement, the utility shall refund to the interconnection customer an amount equal to the difference within 30 calendar days after the final accounting report. Upon request from the interconnection customer, if the difference between the budget estimate and the actual cost exceeds 20 percent, the utility will provide a written explanation for the difference.

5.1.3 If a Party disputes any portion of its payment obligation pursuant to this Article 5, the Party shall pay in a timely manner all non-disputed portions of its invoice, and the disputed amount shall be resolved pursuant to the dispute resolution provisions contained in Article 8. A Party disputing a portion of an Article 5 payment shall not be considered to be in default of its obligations under this Article.

5.2 Interconnection Customer Deposit

At least 20 business days prior to the commencement of the design, procurement, installation, or construction of the utility's interconnection facilities and distribution upgrades, the interconnection customer shall provide the utility with a deposit equal to 100 percent of the estimated, nonbinding cost to procure, install, or construct any such facilities. However, when the estimated date of completion of the building or installation of facilities exceeds three months from the date of payment of the deposit, pursuant to Article 4.1.1 of this Agreement, this deposit may be held by the utility and will accrue interest in accordance with 199 IAC 20.4(4), with any interest to inure to the benefit of the interconnection customer.

Article 6. Assignment, Limitation on Damages, Indemnity, Force Majeure, and Default

6.1 Assignment

This Agreement may be assigned by either Party with the prior consent of the other Party. If the interconnection customer attempts to assign this Agreement, the assignee must agree to the terms of this Agreement in writing and such writing must be provided to the utility. Any attempted assignment that violates this Article is void and ineffective. Assignment shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason of the assignment. An assignee is responsible for meeting the same obligations as the assignor.

6.1.1 Either Party may assign this Agreement without the consent of the other Party to any affiliate (including mergers, consolidations, or transfers or a sale of a substantial portion of the Party's assets, between the Party and another entity), of the assigning Party that has an equal or greater credit rating and the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement.

6.1.2 The interconnect ion customer can assign this Agreement, without the consent of the utility, for collateral security purposes to aid in providing financing for the distributed generation facility.

6.2 Limitation on Damages

Except for cases of gross negligence or willful misconduct, the liability of any Party to this Agreement shall be limited to direct actual damages, including death, bodily injury, third-party claims, and reasonable attorney's fees, and all other damages at law are waived. Under no circumstances, except for cases of gross negligence or willful misconduct, shall any Party or its directors, officers, employees, and agents, or any of them, be liable to another Party, whether in tort, contract, or other basis in law or equity for any special, indirect, punitive, exemplary, or consequential damages, including lost profits, lost revenues, replacement power, cost of capital, or replacement equipment. This limitation on damages shall not affect any Party's rights to obtain equitable relief, including specific performance, as otherwise provided in this Agreement. The provisions of this Article 6.2 shall survive the termination or expiration of the Agreement.

6.3 Indemnity

- 6.3.1 This provision protects each Party from liability incurred as a result of carrying out the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in Article 6.2.
- 6.3.2 The interconnection customer shall indemnify and defend the utility and the utility's directors, officers, employees, and agents, from all claims, damages, and expenses, including reasonable attorney's fees, to the extent resulting from the interconnection customer's negligent installation, operation, modification, maintenance, or removal of its distributed generation facility or interconnection facilities, or the interconnection customer's willful misconduct or breach of this Agreement.
- 6.3.3 The utility shall indemnify and defend the interconnection customer and the interconnection customer's directors, officers, employees, and agents from all claims, damages, and expenses, including reasonable attorney's fees, to the extent resulting from the utility's negligent installation, operation, modification, maintenance, or removal of its interconnection facilities or electric distribution system, or the utility's willful misconduct or breach of this Agreement.
- 6.3.4 Within five business days after receipt by an indemnified Party of any claim or notice that an action or administrative or legal proceeding or investigation as to which the indemnity provided for in this Article may apply has commenced, the indemnified Party shall notify the indemnifying Party of such fact. The failure to notify, or a delay in notification, shall not affect a Party's indemnification obligation unless that failure or delay is materially prejudicial to the indemnifying Party.
- 6.3.5 If an indemnified Party is entitled to indemnification under this Article as a result of a claim, and the indemnifying Party fails, after notice and reasonable opportunity to proceed under this Article, to assume the defense of such claim, that indemnified Party may, at the expense of the indemnifying Party, contest, settle, or consent to the entry of any judgment with respect to, or pay in full, the claim.
- 6.3.6 If an indemnifying Party is obligated to indemnify and hold any indemnified Party harmless under this Article, the amount owing to the indemnified person shall be the amount of the indemnified Party's actual loss, net of any insurance or other recovery by the indemnified Party.

6.4 Force Majeure

6.4.1 As used in this Article , a force majeure event shall mean any act of God, labor disturbance, act of the public enemy, war, acts of terrorism, insurrection, riot, fire, storm or flood, explosion, breakage, or accident to machinery or equipment through no direct, indirect, or contributory act of a Party, any order, regulation or restriction imposed by governmental , military, or lawfully established civilian authorities (e.g., MISO or SPP), or any other cause beyond a Party's control. A force majeure event does not include an act of gross negligence or intentional wrong-doing by the Party claiming force majeure.

6.4.2 If a force majeure event prevents a Party from fulfilling any obligations under this Agreement, the Party affected by the force majeure event ("Affected Party") shall notify the other Party of the existence of the force majeure event as soon as reasonably possible. The notification will specify the circumstances of the force majeure event, its expected duration (if known), and the steps that the Affected Party is taking and will take to mitigate the effects of the event on its performance (if known). If the initial notification is verbal, it must be followed up with a written notification promptly thereafter. The Affected Party shall keep the other Party informed on a periodic basis of developments relating to the force majeure event until the event ends. The Affected Party may suspend or modify its obligations under this Agreement without liability only to the extent that the effect of the force majeure event cannot be otherwise mitigated.

6.5 Default

6.5.1 No default shall exist when the failure to discharge an obligation results from a force majeure event as defined in this Agreement, or the result of an act or omission of the other Party.

6.5.2 A Party shall be in default ("Default") of this Agreement if it fails in any material respect to comply with, observe, or perform, or defaults in the performance of, any covenant or obligation under this Agreement and fails to cure the failure within 60 calendar days after receiving written notice from the other Party. Upon a default of this Agreement, the non-defaulting Party shall give written notice of the default to the defaulting Party. Except as provided in Article 6.5.3, the defaulting Party has 60 calendar days after receipt of the default notice to cure the default; provided, however, if the default cannot be cured within 60 calendar days, the defaulting Party shall commence the cure within 20 calendar days after original notice and complete the cure within six months from receipt of the default notice; and, if cured within that time, the default specified in the notice shall cease to exist.

- 6.5.3 If a Party has assigned this Agreement in a manner that is not specifically authorized by Article 6.1, fails to provide reasonable access pursuant to Article 2.3, and is in default of its obligations pursuant to Article 7, or if a Party is in default of its payment obligations pursuant to Article 5 of this Agreement, the defaulting Party has 30 days from receipt of the default notice to cure the default.
- 6.5.4 If a default is not cured as provided for in this Article, or if a default is not capable of being cured within the period provided for in this Article, the non-defaulting Party shall have the right to terminate this Agreement without liability by written notice, and be relieved of any further obligation under this Agreement and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due under this Agreement, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this Article shall survive termination of this Agreement.

Article 7. Insurance

- 7.1 For distributed generation facilities with a nameplate capacity less than 1 MVA, the interconnection customer shall carry general liability insurance coverage, such as, but not limited to, homeowner's insurance.
- 7.2 For distributed generation facilities with a nameplate capacity of 1 MVA or above, the interconnection customer shall carry sufficient insurance coverage so that the maximum comprehensive/general liability coverage that is continuously maintained by the interconnection customer during the term shall be not less than \$2,000,000 for each occurrence, and an aggregate, if any, of at least \$4,000,000. The utility, its officers, employees, and agents shall be added as an additional insured on this policy. The interconnection customer agrees to provide the utility with at least 30 calendar days' advance written notice of cancellation, reduction in limits, or non-renewal of any insurance policy required by this Article.

Article 8. Dispute Resolution

- 8.1 Parties shall attempt to resolve all disputes regarding interconnection as provided in this Article in a good faith manner.
- 8.2 If there is a dispute between the Parties about an interpretation of the Agreement, the aggrieved Party shall issue a written notice to the other Party to the agreement that specifies the dispute and the Agreement articles that are disputed.

- 8.3 A meeting between the Parties shall be held within ten business days after receipt of the written notice. Persons with decision-making authority from each Party shall attend the meeting. If the dispute involves technical issues, persons with sufficient technical expertise and familiarity with the issue in dispute from each Party shall also attend the meeting. If the Parties agree, the meeting may be conducted by teleconference.
- 8.4 After the first meeting, each Party may seek resolution through the Iowa Utilities Board chapter 6 complaint procedures (199 IAC 6). Dispute resolution under these procedures will initially be conducted informally under 199 IAC 6.2 through 64 to minimize cost and delay. If any Party is dissatisfied with the outcome of the informal process, the Party may file a formal complaint with the Board under 199 IAC 6.5.
- 8.5 Pursuit of dispute resolution may not affect an interconnection request or an interconnection applicant's position in the utility's interconnection review order.
- 8.6 If the Parties fail to resolve their dispute under the dispute resolution provisions of this Article, nothing in this Article shall affect any Party's rights to obtain equitable relief, including specific performance, as otherwise provided in this Agreement

Article 9. Miscellaneous

9.1 Governing Law, Regulatory Authority, and Rules

The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of Iowa, without regard to its conflicts of law principles. This Agreement is subject to all applicable laws and regulations. Each Party expressly reserves the right to seek change in, appeal, or otherwise contest any laws, orders, or regulations of a governmental authority. The language in all parts of this Agreement shall in all cases be construed as a whole, according to its fair meaning, and not strictly for or against the utility or interconnection customer, regardless of the involvement of either Party in drafting this Agreement

9.2 Amendment

Modification of this Agreement shall be only by a written instrument duly executed by both Parties.

9.3 No Third-Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations in this Agreement assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

9.4 Waiver

9.4.1 Except as otherwise provided in this Agreement, a Party's compliance with any obligation, covenant, agreement, or condition in this Agreement may be waived by the Party entitled to the benefits thereof only by a written instrument signed by the Party granting the waiver, but the waiver or failure to insist upon strict compliance with the obligation, covenant, agreement, or condition shall not operate as a waiver of, or estoppel with respect to, any subsequent or other failure.

9.4.2 Failure of any Party to enforce or insist upon compliance with any of the terms or conditions of this Agreement, or to give notice or declare this Agreement or the rights under this Agreement terminated, shall not constitute a waiver or relinquishment of any rights set out in this Agreement, but the same shall be and remain at all times in full force and effect, unless and only to the extent expressly set forth in a written document signed by that Party granting the waiver or relinquishing any such rights. Any waiver granted, or relinquishment of any right, by a Party shall not operate as a relinquishment of any other rights or a waiver of any other failure of the Party granted the waiver to comply with any obligation, covenant, agreement, or condition of this Agreement.

9.5 Entire Agreement

Except as provided in Article 9.1, this Agreement, including all attachments and the completed ~~standard~~ Certificate of Completion (~~199 IAC 45.15~~), constitutes the entire Agreement between the Parties with reference to the subject matter of this Agreement, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants that constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

9.6 Multiple Counterparts

This Agreement may be executed in two or more counter parts, each of which is deemed an original, but all constitute one and the same instrument.

9.7 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties, or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power, or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

9.8 Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other governmental authority, (1) that portion or provision shall be deemed separate and independent, (2) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by the ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

9.9 Environmental Releases

Each Party shall notify the other Party of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the distributed generation facility or the interconnection facilities, each of which may reasonably be expected to affect the other Party. The notifying Party shall (1) provide the notice as soon as practicable, provided that Party makes a good faith effort to provide the notice no later than 24 hours after that Party becomes aware of the occurrence, and (2) promptly furnish to the other Party copies of any publicly available reports filed with any governmental authorities addressing such events.

9.10 Subcontractors

Nothing in this Agreement shall prevent a Party from using the services of any subcontractor it deems appropriate to perform its obligations under this Agreement; provided, however, that each Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing services and each Party shall remain primarily liable to the other Party for the performance of the subcontractor.

9.10.1 A subcontract relationship does not relieve any Party of any of its obligations under this Agreement. The hiring Party remains responsible to the other Party for the acts or omissions of its subcontractor. Any applicable obligation imposed by this Agreement upon the hiring Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of the hiring Party.

9.10.2 The obligations under this Article cannot be limited in any way by any limitation of subcontractor's insurance.

Article 10. Notices

10.1 General

Unless otherwise provided in this Agreement, any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person, delivered by recognized national courier service, or sent by first-class mail, postage prepaid, to the person specified below:

If Notice is to Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ E-mail: _____

If Notice is to Utility:

Utility: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ E-mail: _____

Alternative Forms of Notice:

Any notice or request required or permitted to be given by either Party to the other Party and not required by this Agreement to be in writing may be given by telephone, facsimile or E-mail to the telephone numbers and E-mail addresses set out above.

10.2 Billing and Payment

Billings and payments shall be sent to the contacts specified for notices in Article 10.1 above, unless a different address is set out below:

If Billing or Payment is to Interconnection Customer:

Interconnection Customer: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

If Billing or Payment is to Utility:

Utility: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

10.3 Designated Operating Representative

The Parties may also designate operating representatives to conduct the communications that may be necessary or convenient for the administration of this Agreement. This person will also serve as the point of contact with respect to operations and maintenance of the Party's facilities. If no such operating representative is designated below, such notices will be sent to the contacts listed in Article 10.1 above.

Interconnection Customer's Operating Representative:

Name: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

Utility's Operating Representative:

Name: _____

Attention: _____

Address: _____

City: _____ State: _____ Zip: _____

10.4 Changes to the Notice Information

Either Party may change this notice information by giving five business days' written notice before the effective date of the change.

Article 11. Signatures

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective duly authorized representatives.

For the Interconnection Customer:

Name: _____

Title: _____

Date: _____

For the Utility:

Name: _____

Title: _____

Date: _____

ATTACHMENT 1

Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

Definitions

Adverse system impact - A negative effect that compromises the safety or reliability of the electric distribution system or materially affects the quality of electric service provided by the utility to other customers.

AEP facility - An AEP facility as defined in 199 IAC 15 (Iowa Utilities Board chapter 15 rules on Cogeneration and Small Power Production), used by an interconnection customer to generate electricity that operates in parallel with the electric distribution system. An AEP facility typically includes an electric generator and the interconnection equipment required to interconnect safely with the electric distribution system or local electric power system.

Applicable laws and regulations - All duly promulgated applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any governmental authority, having jurisdiction over the Parties.

Commissioning test - Tests applied to a distributed generation facility by the applicant after construction is completed to verify that the facility does not create adverse system impacts. At a minimum, the scope of the commissioning tests performed shall include the commissioning test specified IEEE Standard 1547 Section 5.4 "Commissioning tests."

Distributed generation facility - A qualifying facility or an AEP facility.

Distribution upgrades - A required addition or modification to the utility's electric distribution system at or beyond the point of interconnection to accommodate the interconnection of a distributed generation facility. Distribution upgrades do not include interconnection facilities.

Electric distribution system - The facilities and equipment used to transmit electricity to ultimate usage points such as homes and industries from interchanges with higher voltage transmission networks that transport bulk power over longer distances. The voltage levels at which electric distribution systems operate differ among areas but generally carry less than 100 kilovolts of electricity. Electric distribution system has the same meaning as the term Area EPS, as defined in 3.1.6.1 of IEEE standard 1547.

Facilities study - An engineering study conducted by the utility to determine the required modifications to the utility's electric distribution system, including the cost and the time required to build and install the modifications, as necessary to accommodate an interconnection request.

Force majeure event - Any act of God, labor disturbance, act of the public enemy, war, acts of terrorism, insurrection, riot, fire, storm or flood, explosion, breakage, or accident to machinery or equipment through no direct, indirect, or contributory act of a Party, any order, regulation, or restriction imposed by governmental, military, or lawfully established civilian authorities (e.g., MISO or SPP), or any other cause beyond a Party's control. A force majeure event does not include an act of gross negligence or intentional wrongdoing by the Party claiming force majeure.

Governmental authority - Any federal, state, local or other governmental regulatory or administrative agency, court, commission, department, board, other governmental subdivision, legislature, rule making board, tribunal, or other governmental authority having jurisdiction over the Parties, their respective facilities, or the respective services they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that this term does not include the interconnection customer, utility, or any affiliate of either.

IEEE Standard 1547 - The Institute of Electrical and Electronics Engineers, Inc. (IEEE), 3 Park Avenue, New York, NY 10016-5997, Standard 1547 (2003), "Standard for Interconnecting Distributed Resources with Electric Power Systems."

IEEE Standard 1547.1 - The IEEE Standard 1547.1 (2005), "Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems."

Interconnection agreement or Agreement - The agreement between the interconnection customer and the utility. The interconnection agreement governs the connection of the distributed generation facility to the utility's electric distribution system and the ongoing operation of the distributed generation facility after it is connected to the utility's electric distribution system.

Interconnection customer - The entity entering into this Agreement for the purpose of interconnecting a distributed generation facility to the utility's electric distribution system.

Interconnection equipment - A group of components or an integrated system connecting an electric generator with a local electric power system or an electric distribution system that includes all interface equipment, including switchgear, protective devices, inverters, or other interface devices. Interconnection equipment may be installed as part of an integrated equipment package that includes a generator or other electric source.

Interconnection facilities - Facilities and equipment required by the utility to accommodate the interconnection of a distributed generation facility. Collectively, interconnection facilities include all facilities and equipment between the distributed generation facility and the point of interconnection, including modification,

additions, or upgrades that are necessary to physically and electrically interconnect the distributed generation facility to the electric distribution system. Interconnection facilities are sole use facilities and do not include distribution upgrades.

Interconnection request - An interconnection customer's request, on the required form, for the interconnection of a new distributed generation facility, or to increase the capacity or change the operating characteristics of an existing distributed generation facility that is interconnected with the utility's electric distribution system.

Interconnection study - Any of the following studies, as determined to be appropriate by the utility: the interconnection feasibility study, the interconnection system impact study, and the interconnection facilities study.

Iowa standard distributed generation interconnection rules - The most current version of the procedures for interconnecting distributed generation facilities adopted by the Iowa Utilities Board. See Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45).

Parallel operation or Parallel - The state of operation that occurs when a distributed generation facility is connected electrically to the electric distribution system for longer than 100 milliseconds.

Point of interconnection - The point where the distributed generation facility is electrically connected to the electric distribution system. Point of interconnection has the same meaning as the term "point of common coupling" defined in 3.1.13 of IEEE Standard 1547.

Qualifying facility - A cogeneration facility or a small power production facility that is a qualifying facility under 18 CFR Part 292, Subpart B, used by an interconnection customer to generate electricity that operates in parallel with the electric distribution system. A qualifying facility typically includes an electric generator and the interconnection equipment required to interconnect safely with the electric distribution system or local electric power system.

Utility - Any electric utility that is subject to rate regulation by the Iowa Utilities Board.

Witness test - For lab-certified equipment, verification (either by an on-site observation or review of documents) by the utility that the interconnection installation evaluation required by IEEE Standard 1547 Section 5.3 and the commissioning test required by IEEE Standard 1547 Section 5.4 have been adequately performed. For interconnection equipment that has not been lab-certified, the witness test shall also include verification by the utility of the on-site design tests required by IEEE Standard 1547 Section 5.1 and verification by the utility of production tests required by IEEE Standard 1547 Section 5.2. All tests verified by the utility are to be performed in accordance with the test procedures specified by IEEE Standard 1547.1.

ATTACHMENT 2
Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

Construction Schedule, Proposed Equipment & Settings

This attachment is to be completed by the interconnection customer and shall include the following:

1. The construction schedule for the distributed generation facility.
2. A one-line diagram indicating the distributed generation facility, interconnection equipment, interconnection facilities, metering equipment, and distribution upgrades.
3. Component specifications for equipment identified in the one-line diagram.
4. Component settings.
5. Proposed sequence of operations.
6. A three-line diagram showing current potential circuits for protective relays.
7. Relay tripping and control schematic diagram.
8. A plot plan showing the distributed generation facility's location in relation to streets, alleys, address or other geographical markers.

ATTACHMENT 3

Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

Description, Costs, and Time Required to
Build and Install the Utility's Interconnection Facilities

This attachment is to be completed by the utility and shall include the following:

1. Required interconnection facilities, including any required metering.
2. An estimate of itemized costs charged by the utility for interconnection, including overheads, based on results from prior studies.
3. An estimate for the time required to build and install the utility's interconnection facilities based on results from prior studies and an estimate of the date upon which the facilities will be completed.

ATTACHMENT 4

Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

Operating Requirements for Distributed Generation Facilities Operating in Parallel

The utility shall list specific operating practices that apply to this distributed generation interconnection and the conditions under which each listed specific operating practice applies.

ATTACHMENT 5

Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

Monitoring and Control Requirements

This attachment is to be completed by the utility and shall include the following:

1. The utility's monitoring and control requirements must be specified, along with a reference to the utility's written requirements documents from which these requirements are derived.
2. An Internet link to the requirements documents.

ATTACHMENT 6

Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

Metering Requirements

This attachment is to be completed by the utility and shall include the following:

1. The metering requirements for the distributed generation facility.
2. Identification of the appropriate metering rules filed with the Iowa Utilities Board under subrule 199 IAC 20.2(5), and inspection and testing practices adopted under rule 199 IAC 20.6 that establish these requirements.
3. An Internet link to these rules and practices.

ATTACHMENT 7

Levels 2 To 4: ~~Standard~~ Distributed Generation Interconnection Agreement

As-Built Documents

This attachment is to be completed by the interconnection customer and shall include the following:

When it returns the certificate of completion to the utility, the interconnection customer shall provide the utility with documents detailing the as-built status of the following.

1. A one-line diagram indicating the distributed generation facility, interconnection equipment, interconnection facilities, and metering equipment.
2. Component specifications for equipment identified in the one-line diagram.
3. Component settings.
4. Proposed sequence of operations.
5. A three-line diagram showing current potential circuits for protective relays.
6. Relay tripping and control schematic diagram.

~~199—45.18(476) Appendix E—Standard interconnection feasibility study agreement.~~

INTERCONNECTION FEASIBILITY STUDY AGREEMENT

This agreement ("Agreement") is made and entered into this _____ day of _____, by and between _____ ("interconnection customer"), as an individual person, or as a _____ organized and existing under the laws of the State of _____, and _____, ("utility"), a _____ existing under the laws of the State of Iowa. Interconnection customer and utility each may be referred to as a "Party," or collectively as the "Parties."

Recitals:

Whereas, interconnection customer is proposing to develop a distributed generation facility, or modify an existing distributed generation facility, consistent with the interconnection request application form completed by interconnection customer on _____; and

Whereas, interconnection customer desires to interconnect the distributed generation facility with utility's electric distribution system; and

Whereas, the interconnection customer has requested the utility to perform an interconnection feasibility study to assess the feasibility of interconnecting the proposed distributed generation facility to the utility's electric distribution system;

Now, therefore, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1. All terms defined in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1) shall have the meanings indicated in that rule when used in this Agreement.
2. Interconnection customer elects and utility shall cause to be performed an interconnection feasibility study consistent with Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.11).
3. The scope of the interconnection feasibility study shall be based upon the information set forth in the interconnection request application form and Attachment A to this Agreement.
4. The interconnection feasibility study shall be based on the technical information provided by interconnection customer in the interconnection request application form, as modified with the written agreement of the Parties. Utility has the right to request additional technical information from interconnection customer during the course of the interconnection

- feasibility study. If the interconnection customer modifies its interconnection request, the time to complete the interconnection feasibility study may be extended by the utility.
5. In performing the study, utility shall rely on existing studies of recent vintage to the extent practical. The interconnection customer will not be charged for such existing studies; however, interconnection customer is responsible for the cost of applying any existing study to the interconnection customer specific requirements and for any new study that the utility performs.
 6. The interconnection feasibility study report must provide the following information:
 - 6.1.1 Identification of any equipment short circuit capability limits exceeded as a result of the interconnection,
 - 6.1.2 Identification of any thermal overload or voltage limit violations resulting from the interconnection, and
 - 6.1.3 A description and nonbinding estimated cost of facilities required to interconnect the distributed generation facility to utility's electric distribution system as required under Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.11(5)"a").
 7. Interconnection customer shall provide a study deposit equal to 100 percent of the estimated nonbinding study costs at least 20 business days prior to the date upon which the study commences.
 8. The interconnection feasibility study shall be completed and the results shall be transmitted to interconnection customer within 45 business days after this Agreement is signed by the Parties or the complete study deposit is received by the utility, whichever occurs later. If the interconnection customer's study request involves more than one point of interconnection and configuration, the time to complete the interconnection feasibility study may be extended by the utility.
 9. Study fees shall be based on actual costs and will be invoiced to interconnection customer after the study is transmitted to interconnection customer. The invoice must include an itemized listing of employee time and costs expended on the study.
 10. Interconnection customer shall pay any actual study costs that exceed the deposit without interest within 30 calendar days on receipt of the invoice. Utility shall refund any excess deposit amount without interest within 30 calendar days after the invoice.

In witness whereof, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Insert name of interconnection customer]

Signed: _____

Name (Printed): _____ Title: _____

[Insert name of utility]

Signed: _____

Name (Printed): _____ Title: _____

ATTACHMENT A
Interconnection Feasibility Study Agreement

Assumptions Used in Conducting the Interconnection Feasibility Study

The interconnection feasibility study will be based upon the information in the interconnection request application form, agreed upon on _____

1. Point of interconnection and configuration to be studied.

2. Alternative points of interconnection and configurations to be studied.

Note: 1 and 2 are to be completed by the interconnection customer. Any additional assumptions (explained below) may be provided by either the interconnection customer or the utility.

199—45.19(476) Appendix F— Standard interconnection system impact study agreement.

INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT

This agreement ("Agreement") is made and entered into this _____ day of _____, by and between _____ ("interconnection customer"), as an individual person, or as a _____ organized and existing under the laws of the State of _____, and _____, ("utility"), a _____ existing under the laws of the State of Iowa. Interconnection customer and utility each may be referred to as a "Party," or collectively as the "Parties."

Recitals:

Whereas, interconnection customer is proposing to develop a distributed generation facility or modifying an existing distributed generation facility consistent with the interconnection request application form completed by interconnection customer on _____; and

Whereas, interconnection customer desires to interconnect the distributed generation facility to utility's electric distribution system; and

Whereas, utility has completed an interconnection feasibility study and provided the results of said study to interconnection customer (this recital to be omitted if the Parties have agreed to forego the interconnection feasibility study); and

Whereas, interconnection customer has requested utility to perform an interconnection system impact study to assess the impact of interconnecting the distributed generation facility to utility's electric distribution system;

Now, therefore, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1. All terms defined in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1) shall have the meanings indicated in that rule when used in this Agreement.
2. Interconnection customer elects and utility shall cause to be performed an interconnection system impact study consistent with Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.11).
3. The scope of the interconnection system impact study shall be based upon the information set forth in the interconnection request application form and in Attachment A to this Agreement.

4. The interconnection system impact study shall be based upon the interconnection feasibility study and the technical information provided by interconnection customer in the interconnection request application form. Utility reserves the right to request additional technical information from interconnection customer. If interconnection customer modifies its proposed point of interconnection, interconnection request, or the technical information provided therein is modified, the time to complete the interconnection system impact study may be extended.
5. The interconnection system impact study report shall provide the following information:
 - 5.1 Identification of any equipment short circuit capability limits exceeded as a result of the interconnection,
 - 5.2 Identification of any thermal overload or voltage limit violations resulting from the interconnection,
 - 5.3 Identification of any instability or inadequately damped response to system disturbances resulting from the interconnection, and
 - 5.4 Description and nonbinding estimated cost of facilities required to interconnect the distributed generation facility to utility's electric distribution system and to address the identified short circuit, thermal overload, voltage, and instability issues as required under Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.11(5)"b").
6. Interconnection customer shall provide a study deposit equal to 100 percent of the estimated nonbinding study costs at least 20 business days prior to the date upon which the study commences.
7. The interconnection system impact study, if required, shall be completed and the results transmitted to interconnection customer within 45 business days after this Agreement is signed by the Parties or the complete study deposit is received by the utility, whichever occurs later. If the interconnection customer's study request involves more than one point of interconnection and configuration, the time to complete the interconnection system impact study may be extended by the utility.
8. Study fees shall be based on actual costs and shall be invoiced to interconnection customer after the study is transmitted to interconnection customer. The invoice shall include an itemized listing of employee time and costs expended on the study.
9. Interconnection customer shall pay any study costs that exceed the deposit within 30 calendar days after receipt of the invoice. Utility shall refund any excess deposit amount within 30 calendar days of the invoice.

In witness thereof, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Insert name of interconnection customer]

Signed: _____

Name (Printed): _____ Title: _____

[Insert name of utility]

Signed: _____

Name (Printed): _____ Title: _____

ATTACHMENT A
Interconnection System Impact Study Agreement

Assumptions Used in Conducting the Interconnection System Impact Study

The interconnection system impact study shall be based upon the results of the interconnection feasibility study, subject to any modifications in accordance with Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.11), and the following assumptions:

1. Point of interconnection and configuration to be studied.

2. Alternative points of interconnection and configurations to be studied.

Note: 1 and 2 are to be completed by the interconnection customer. Any additional assumptions (explained below) may be provided by either the interconnection customer or the utility.

~~199—45.20(476) Appendix G—Standard interconnection facilities study agreement.~~

INTERCONNECTION FACILITIES STUDY AGREEMENT

This agreement ("Agreement") is made and entered into this _____ day of _____, by and between _____ ("interconnection customer"), as an individual person, or as a _____ organized and existing under the laws of the State of _____, and _____, ("utility"), a _____ existing under the laws of the State of Iowa. Interconnection customer and utility each may be referred to as a "Party," or collectively as the "Parties."

Recitals:

Whereas, interconnection customer is proposing to develop a distributed generation facility or modifying an existing distributed generation facility consistent with the interconnection request application form completed by interconnection customer on _____; and

Whereas, interconnection customer desires to interconnect the distributed generation facility with utility's electric distribution system; and

Whereas, utility has completed an interconnection system impact study and provided the results of said study to interconnection customer; and

Whereas, interconnection customer has requested utility to perform an interconnection facilities study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed to interconnect the distributed generation facility;

Now, therefore, in consideration of and subject to the mutual covenants contained in this Agreement, the Parties agree as follows:

1. All terms defined in Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.1) shall have the meanings indicated in that rule when used in this Agreement.
2. Interconnection customer elects and utility shall cause to be performed an interconnection facilities study consistent with Iowa Utilities Board chapter 45 rules on Electric Interconnection of Distributed Generation Facilities (199 IAC 45.11).
3. The scope of the interconnection facilities study shall be determined by the information provided in Attachment A to this Agreement.
4. An interconnection facilities study report (1) shall provide a description, estimated cost of distribution upgrades, and a schedule for required facilities to interconnect the distributed generation facility to utility's electric distribution system; and (2) shall address all issues identified in

- the interconnection system impact study (or identified in this study if the system impact study is combined herein).
5. Interconnection customer shall provide a study deposit of 100 percent of the estimated nonbinding study costs at least 20 business days prior to the date upon which the study commences.
 6. In cases where no distribution upgrades are required, the interconnection facilities study shall be completed and the results shall be transmitted to interconnection customer within 15 business days after this Agreement is signed by the Parties. In cases where distribution upgrades are required, the interconnection facilities study shall be completed and the results shall be transmitted to interconnection customer within ~~35~~30 business days after this Agreement is signed by the Parties or the complete study deposit is received by the utility, whichever occurs later.
 7. Study fees shall be based on actual costs and will be invoiced to interconnection customer after the study is transmitted to interconnection customer. The invoice shall include an itemized listing of employee time and costs expended on the study.
 8. Interconnection customer shall pay any actual study costs that exceed the deposit within 30 calendar days on receipt of the invoice. Utility shall refund any excess deposit amount within 30 calendar days after the invoice.

In witness whereof, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Insert name of interconnection customer]

Signed: _____

Name (Printed): _____ Title: _____

[Insert name of utility]

Signed: _____

Name (Printed): _____ Title: _____

ATTACHMENT A
Interconnection Facilities Study Agreement

Minimum Information that the Interconnection Customer Must Provide with the
Interconnection Facilities Study Agreement

Provide location plan and simplified one-line diagram of the distributed generation facilities.

For staged projects, please indicate size and location of planned additional future generation.

On the one-line diagram, indicate the generation capacity attached at each metering location. (Maximum load on Current Transformer/Potential Transformer (CT/PT)).

On the one-line diagram, indicate the location of auxiliary power. (Minimum load on CT/PT) Amps.

One set of metering is required for each generation connection to the utility's electric distribution system.

Number of generation connections: _____

Will an alternate source of auxiliary power be available during CT/PT maintenance?

Yes _____ No _____

Will a transfer bus on the generation side of the metering require that each meter set be designed for the total distributed generation capacity?

Yes _____ No _____ (Please indicate on the one-line diagram.)

What type of control system or Programmable Logic Controllers (PLC) will be located at the distributed generation facility?

What protocol does the control system or PLC use? _____

Please provide a scale drawing of the site. Indicate the point of interconnection, distribution line, and property lines.

Number of third-party easements required for utility's interconnection facilities:

.....
To be Completed in Coordination with the Utility

Is the distributed generation facility located in utility's service area?

Yes _____ No _____

If No, please provide name of local provider: _____

Please provide the following proposed schedule dates:

Begin construction date: _____

Generator step-up transformers receive back feed power date: _____

Commissioning testing date: _____

Witness testing date: _____

Commercial operation date: _____