UTILITIES DIVISION[199]

Regulatory Analysis

Notice of Intended Action to be published: Iowa Administrative Code 199—Chapter 45
"Electric Interconnection of Distributed Generation Facilities"

Iowa Code section(s) or chapter(s) authorizing rulemaking: 476.1 and 476.8

State or federal law(s) implemented by the rulemaking: Iowa Code sections 476.1 and 476.8; and Section 211 of the Public Utilities Regulatory Policies Act of 1978 as amended by the Energy Policy Act of 2005

Public Hearing

A public hearing at which persons may present their views orally or in writing will be held as follows:

July 18, 2024 2 p.m.	Board Hearing Room 1375 East Court Avenue Des Moines, Iowa

Public Comment

Any interested person may submit written or oral comments concerning this Regulatory Analysis. Written or oral comments in response to this Regulatory Analysis must be received by the Utilities Board no later than 4:30 p.m. on the date of the public hearing. Comments should be directed to:

IT Support
Iowa Utilities Board
Phone: 515.725.7300
Email: ITsupport@iub.iowa.gov

Purpose and Summary

The purpose of this proposed chapter is to review interconnection of distributed generation facilities seeking to operate in parallel with utilities.

Analysis of Impact

1. Persons affected by the proposed rulemaking:

- Classes of persons that will bear the costs of the proposed rulemaking:

The utilities will bear the costs of providing the information for review of the interconnection requests.

- Classes of persons that will benefit from the proposed rulemaking:

The utilities will benefit from review of the interconnection requests by having another party reviewing the requests to identify issues that may arise, while customers receive the benefit of having the generation facilities reviewed prior to interconnection.

2. Impact of the proposed rulemaking, economic or otherwise, including the nature and amount of all the different kinds of costs that would be incurred:

- Quantitative description of impact:

There will be additional costs for those requesting interconnection of facilities since the interconnection requests will have to undergo review and the utilities will provide the appropriate information for that review. Those costs will be borne by those companies requesting the interconnection review, as well as some cost for the Board to review these interconnection requests; however, the costs of the Board are everyday costs of the Board and Board staff to complete the Board's work and will be billed and assessed to companies as required under statute and Board rules.

- Qualitative description of impact:

The review is providing additional checks on generation facilities and interconnections within the electrical grid to provide customers assurance the electrical grid is secure and reliable.

3. Costs to the State:

- Implementation and enforcement costs borne by the agency or any other agency:

As stated above, the costs borne by the agency are part of the everyday costs of the Board and will be billed and assessed as required under statute and Board rules.

- Anticipated effect on state revenues:

There is no anticipated effect on state revenues.

4. Comparison of the costs and benefits of the proposed rulemaking to the costs and benefits of inaction:

Inaction would allow for no oversight on the interconnection of generation into the electrical grid, which could lead to insecurity and unreliability in the state's electrical grid. While there are relatively minor additional costs for the Board to review the facilities covered by this chapter, those costs are outweighed by the benefits of a reliable electrical grid.

5. Determination whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rulemaking:

There is no less costly method to review these interconnection facilities because the less costly method is inaction and not reviewing them.

6. Alternative methods considered by the agency:

- Description of any alternative methods that were seriously considered by the agency:

The alternative method was to review all facilities for interconnection that could be reviewed.

- Reasons why alternative methods were rejected in favor of the proposed rulemaking:

This alternative, inaction, was rejected since it was overly burdensome and would have negative impacts on generation facilities and generation as a whole within Iowa.

Small Business Impact

If the rulemaking will have a substantial impact on small business, include a discussion of whether it would be feasible and practicable to do any of the following to reduce the impact of the rulemaking on small business:

- Establish less stringent compliance or reporting requirements in the rulemaking for small business.
- Establish less stringent schedules or deadlines in the rulemaking for compliance or reporting requirements for small business.
- Consolidate or simplify the rulemaking's compliance or reporting requirements for small business.
- Establish performance standards to replace design or operational standards in the rulemaking for small business.
- Exempt small business from any or all requirements of the rulemaking.

If legal and feasible, how does the rulemaking use a method discussed above to reduce the substantial impact on small business?

There is no expected impact on small business.

Text of Proposed Rulemaking

ITEM 1. Rescind 199—Chapter 45 and adopt the following **new** chapter in lieu thereof:

CHAPTER 45
ELECTRIC INTERCONNECTION OF DISTRIBUTED GENERATION FACILITIES

199—45.1(476) Definitions. Terms defined in the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 2601 et seq., in effect as of [effective date of chapter] will have the same meaning for purposes of these rules as the terms have under PURPA unless further defined in this chapter.

"Adverse system impact" means 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" means an AEP facility, as defined in 199—Chapter 15, 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.

"Affected system" means an electric system not owned or operated by the utility reviewing the interconnection request that could suffer an adverse system impact from the proposed interconnection.

"Applicant" means a person (or entity) who has submitted an interconnection request to interconnect a distributed generation facility to a utility's electric distribution system.

"Area network" means a type of electric distribution system served by multiple transformers interconnected in an electrical network circuit, generally used in large, densely populated metropolitan areas.

"Board" means the Iowa utilities board.

"Certificate of completion" means the Certificate of Completion form that contains information about the interconnection equipment to be used, its installation, and local inspections.

"CFR" means the Code of Federal Regulations, which contains the general administrative rules adopted by federal departments and agencies, in effect as of [effective date of chapter], unless a separate effective date is identified in a specific rule.

"Commissioning test" means a test applied to a distributed generation facility by the applicant after construction is completed to verify that the facility does not create adverse system impacts and performs to the submitted specifications. At a minimum, the scope of the commissioning tests performed will include the commissioning test specified in Institute of Electrical and Electronics Engineers Inc. (IEEE) Standard 1547, Section 11 "Test and Verification Requirements."

"Distributed generation facility" means a qualifying facility, an AEP facility, or an energy storage facility.

"Distribution upgrade" means a required addition or modification to the electric distribution system to accommodate the interconnection of the distributed generation facility. Distribution upgrades do not include interconnection facilities.

"Electric distribution system" means the facilities and equipment owned and operated by the utility and 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 operate at less than 100 kilovolts of electricity. "Electric distribution system" has the same meaning as the term "Area EPS," as defined in Section 3.1 of IEEE Standard 1547.

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

"IEEE Standard 1547" is the IEEE, 3 Park Avenue, New York, NY 10016-5997, Standard 1547 (2018), as amended on March 9, 2020, "Standard for Interconnection and Interoperability of Distributed Energy Resources and Associated Electric Power System Interfaces."

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

"Interconnection equipment" means a group of components or an integrated system owned and operated by the interconnection customer that connects an electric generator with a local electric power system, as that term is defined in Section 3.1 of IEEE Standard 1547, or with the electric distribution system. Interconnection equipment is 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" means 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's interconnection equipment and the point of interconnection, including any modifications, additions, or upgrades 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" means an applicant's request, in a form approved by the board, for interconnection of a new distributed generation facility or to change the capacity or other operating characteristics of an existing distributed generation facility already interconnected with the electric distribution system.

"Interconnection study" is any study described in rule 199—45.11(476).

"Lab-certified" means a designation that the interconnection equipment meets the requirements set forth in rule 199—45.6(476).

"Line section" is that portion of an electric distribution system connected to an interconnection customer's site, bounded by automatic sectionalizing devices or the end of the distribution line, or both.

"Local electric power system" means facilities that deliver electric power to a load that is contained entirely within a single premises or group of premises and has the same meaning as that term as defined in Section 3.1 of IEEE Standard 1547.

"Nameplate capacity" is the maximum rated output of a generator, prime mover, or other electric power production equipment under specific conditions designated by the manufacturer and is usually indicated on a nameplate physically attached to the power production equipment.

"Nationally recognized testing laboratory" or *"NRTL"* means a qualified private organization that meets the requirements of the Occupational Safety and Health Administration's (OSHA's) regulations. More information is contained in 29 CFR 1910.7 as amended through February 18, 2020. NRTLs perform independent safety testing and product certification.

"Parallel operation" or *"parallel"* means a distributed generation facility that is connected electrically to the electric distribution system for longer than 100 milliseconds continuously.

"Point of interconnection" has the same meaning as the term "point of common coupling" as defined in Section 3.1 of IEEE Standard 1547.

"Primary line" means an electric distribution system line operating at greater than 600 volts.

"Qualifying facility" means 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.

"Radial distribution circuit" means a circuit configuration in which independent feeders branch out radially from a common source of supply.

"Review order position" means, for each distribution circuit or line section, the order of a completed interconnection request relative to all other pending completed interconnection requests on that distribution circuit or line section. The review order position is established by the date that the utility receives the completed interconnection request.

"Scoping meeting" means a meeting between representatives of the applicant and utility conducted for the purpose of discussing interconnection issues and exchanging relevant information.

"Secondary line" means an electric distribution system line, or service line, operating at 600 volts or less.

"Shared transformer" means a transformer that supplies secondary voltage to more than one customer.

"Spot network" means a type of electric distribution system that uses two or more inter-tied transformers to supply an electrical network circuit and is generally used to supply power to a single customer or a small group of customers. "Spot network" has the same meaning as the term "spot network" as defined in Section 9 "DER on distribution secondary grid/area/street (grid) networks and spot networks" of IEEE Standard 1547.

"UL Standard 1741" means the standard titled "Inverters, Converters, Controllers, and Interconnection System Equipment for Use with Distributed Energy Resources," January 28, 2010, edition, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

"Utility" means an electric utility that is subject to rate regulation by the Iowa utilities board.

"Witness test" for lab-certified equipment means a verification either by an on-site observation or review of documents that the interconnection installation evaluation and the commissioning test required by IEEE Standard 1547, Section 11, have been adequately performed. For interconnection equipment that has not been lab-certified, the witness test also includes verification of the on-site design tests and production tests required by IEEE Standard 1547, Section 11. All verified tests are to be performed in accordance with the test procedures specified by IEEE Standard 1547.1.

199—45.2(476) Scope.

45.2(1) This chapter applies to utilities, and distributed generation facilities seeking to operate in parallel with utilities, provided the facilities are not subject to the interconnection requirements of an affected system, the Federal Energy Regulatory Commission (FERC), the Midcontinent Independent System Operator Inc. (MISO), the Southwest Power Pool (SPP), the Midwest Reliability Organization (MRO), or the SERC Reliability Corporation (SERC).

45.2(2) If the nameplate capacity of the facility is greater than 10 megavolt amps (MVA), the interconnection customer and the utility shall start with the Level 4 review process and agreements under rule 199—45.11(476) and modify the process and agreements as needed by mutual agreement. In addition, the interconnection customer and the utility shall start with the technical standards under rule 199—45.3(476) and modify the standards as needed by mutual agreement. If the interconnection customer and the utility cannot reach mutual agreement, the interconnection customer may seek resolution through the dispute process in rule 199—45.12(476).

199—45.3(476) Technical standards. The technical standard to be used in evaluating interconnection requests governed by this chapter is IEEE Standard 1547 unless otherwise noted.

45.3(1) *Acceptable standards.* The interconnection of distributed generation facilities and associated interconnection equipment to an electric utility system shall meet the applicable provisions of the publications listed below:

a. Standard for Interconnection and Interoperability of Distributed Energy Resources and Associated Electric Power System Interfaces, IEEE Standard 1547. For guidance in applying IEEE Standard 1547, the utility may refer to:

(1) IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems—IEEE Standard 519-2022, as approved May 13, 2022; and

(2) IEC/TR3 61000-3-7 Assessment of Emission Limits for Fluctuating Loads in MV and HV Power Systems, as published on March 4, 2024.

b. Iowa Electrical Safety Code, as defined in 199—Chapter 25.

c. National Electrical Code, ANSI/NFPA 70-2023, as effective on September 1, 2022.

45.3(2) *Interconnection facilities.*

a. A distributed generation facility placed in service after July 1, 2015, is required to have installed a disconnection device that is installed, owned, and maintained by the owner of the distributed generation facility and is easily visible and adjacent to an interconnection customer's electric meter at the facility. Disconnection devices are considered easily visible: for a home or business, the clearly identified container holding the disconnection device is within the line of sight of the meter, at a height of 30 inches to 72 inches above final grade; or for large areas with multiple buildings that require electric service, the clearly identified container holding the disconnection device is within the line of sight of the meter, at a height of 30 inches to 72 inches above final grade. Disconnection devices are considered adjacent to the interconnection customer's electric meter: for a home or business, within 10 feet with nothing blocking access between the disconnection device and electric meter; or for large areas with multiple buildings that require electric service, within 30 feet with nothing blocking access between the disconnection device and electric meter. The disconnection device shall be labeled with a permanently attached sign with clearly visible letters that give procedures/directions for disconnecting the distributed generation facility.

(1) If an interconnection customer with distributed generation facilities installed prior to July 1, 2015, adds generation capacity to its existing system that does not require upgrades to the electric meter or electrical service, a disconnection device is not required, unless required by the electric utility's tariff. The customer must notify the electric utility before the generation capacity is added to the existing system.

(2) If an interconnection customer with distributed generation facilities installed prior to July 1, 2015, upgrades or changes its electric service, the new or modified electric service must meet all current utility electric service rule requirements.

b. For all distributed generation installations, the customer shall provide and place a permanent placard no more than ten feet away from the electric meter. The placard must be visible from the electric meter, clearly identify the presence and location of the disconnection device for the distributed generation facilities on the property, be made of material that is suitable for the environment, and be designed to last for the duration of the anticipated operating life of the distributed generation facility. If no disconnection device is present, the placard shall state "no disconnection device."

If the distributed generation facility is not installed near the electric meter, an additional placard must be placed at the electric meter to provide specific information regarding the distributed generation facility and the disconnection device.

c. The interconnection shall include overcurrent devices on the facility to automatically disconnect the facility at all currents that exceed the full-load current rating of the facility.

d. Distributed generation facilities with a design capacity of 100 kilovolt-amperes (kVA) or less must be equipped with automatic disconnection upon loss of electric utility-supplied voltage.

e. Those facilities that produce a terminal voltage prior to the closure of the interconnection shall be provided with synchronism-check devices to prevent closure of the interconnection under conditions other than a reasonable degree of synchronization between the voltages on each side of the interconnection switch.

45.3(3) *Access.* If a disconnection device is required, the operator of the distributed generation facility, the utility, and emergency personnel shall have access to the disconnection device at all times. For distributed generation facilities installed prior to July 1, 2015, an interconnection customer may elect to provide the utility with access to a disconnection device that is contained in a building or area that may be unoccupied and locked or not otherwise accessible to the utility by installing a lockbox provided by the utility that allows ready access to the disconnection device. In consultation with the customer, the utility will determine the location of the lockbox, which will be accessible by the utility. The interconnection customer shall permit the utility to affix a placard in a location of the utility's choosing that provides instructions to utility operating

personnel for accessing the disconnection device. If the utility needs to isolate the distributed generation facility, the utility shall not be held liable for any damages resulting from the actions necessary to isolate the generation facility.

45.3(4) *Inspections and testing.* The operator of the distributed generation facility shall adopt a program of inspection and testing of the generator and its appurtenances and the interconnection facilities in order to determine necessity for replacement and repair. Such a program includes all periodic tests and maintenance prescribed by the manufacturer. If the periodic testing of interconnection-related protective functions is not specified by the manufacturer, periodic testing will occur at least once every five years. All interconnection-related protective functions shall be periodically tested, and a system that depends upon a battery for trip power shall be checked and logged. The operator shall maintain test reports and make them available upon request by the electric utility. Representatives of the utility shall have access at all reasonable hours to the interconnection equipment specified in subrule 45.3(2) for inspection and testing with reasonable prior notice to the applicant.

45.3(5) *Emergency disconnection.* In the event that an electric utility or its customers experience problems of a type that could be caused by the presence of alternating currents or voltages with a frequency higher than 60 Hertz, the utility shall be permitted to open and lock the interconnection switch pending a complete investigation of the problem. Where the utility believes the condition creates a hazard to the public or to property, the disconnection may be made without prior notice. However, the utility shall notify the operator of the distributed generation facility by written notice and, where possible, verbal notice as soon as practicable after the disconnections.

45.3(6) *Notification.* When the distributed generation facility is placed in service, owners of interconnected distributed generation facilities are required to notify local fire departments via U.S. mail of the location of distributed generation facilities and the associated disconnection device(s). The owner is required to provide any information related to the distributed generation facility as reasonably required by that local fire department, including but not limited to:

a. A site map showing property address; service point from utility company; distributed generation facility and disconnect location(s); location of rapid shutdown and battery disconnect(s), if applicable; property owner's or owner's representative's emergency contact information; utility company's emergency telephone number; and size of the distributed generation facility.

b. Information to access the disconnection device.

c. A statement from the owner verifying that the distributed generation facility was installed in accordance with the current state-adopted National Electrical Code.

45.3(7) *Disconnections.* If an interconnection customer fails to comply with the foregoing requirements of rule 199—45.3(476), the electric utility may require disconnection of the applicant's distributed generation facility until the facility complies with rule 199—45.3(476). The disconnection process shall be specified in individual electric utility tariffs or in the interconnection agreement. If separate disconnection of only the distributed generation facility is not feasible or safe, the customer's electric service may be disconnected as provided in 199—Chapter 20.

45.3(8) *Reconnections.* If a customer's distributed generation facility or electric service is disconnected due to noncompliance with rule 199—45.3(476), the customer shall be responsible for payment of any costs associated with reconnection once the facility is in compliance with the rules.

199—45.4(476) Interconnection requests.

45.4(1) Applicants seeking to interconnect a distributed generation facility shall submit an interconnection request to the utility that owns the electric distribution system to which interconnection is sought; identify in the application if the applicants are representing a group of customers that are located in the same vicinity and whether the application requires a group interconnection study; and use the board-approved interconnection request forms and agreements that are provided on the board's website, iub.iowa.gov.

45.4(2) Preapplication request. Applicants may request a preapplication report from the utility using the following process:

a. The utility shall designate an employee or office from which information on the application process and on the affected system can be obtained through an informal request 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 rooftop solar on each premises or a multiturbine wind project. The name, telephone number, and email address of such contact employee or office shall be made available on the utility's website. Electric system information provided to the applicant should include, to the extent such provision does not violate confidentiality provisions of prior agreements or critical infrastructure requirements, relevant, available system studies,

interconnection studies, and other materials useful for gaining an understanding of an interconnection at a particular point on the utility's electric distribution system. The utility shall comply with reasonable requests for such information.

b. In addition to the information described in paragraph 45.4(2)*"a,"* which may be provided in response to an informal request, an applicant may submit a formal written request form along with a nonrefundable fee of $300 for a preapplication report on a proposed project at a specific site. The utility shall provide the preapplication data described in paragraph 45.4(2)*"a"* to the applicant within 20 business days of receipt of the completed request form and payment of the $300 fee. The preapplication report produced by the utility is nonbinding, it does not confer any rights, and the applicant must still successfully apply to interconnect to the utility's system. The written preapplication report request form requires the inclusion of the following information to clearly and sufficiently identify the location of the proposed point of interconnection:

(1) Proposed distributed generation facility owner's contact information, including name, address, telephone number, and email address.

(2) Project location (street address with nearby cross streets and name of town).

(3) Meter number, pole number, or other equivalent information identifying the proposed point of interconnection, if available.

(4) Generator type (e.g., solar, wind, combined heat and power).

(5) Size (alternating current kW).

(6) Single or three-phase generator configuration.

(7) Stand-alone generator (whether or not there is on-site load, not including station service).

(8) Whether or not new service is requested. 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.

c. Using the information provided in the preapplication report request form in paragraph 45.4(2)*"b,"* 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 or study or both, that this would be the circuit to which the distributed generation facility ultimately will be connected or that interconnection will occur. The applicant must request additional preapplication reports if information about multiple points of interconnection is requested. Subject to paragraph 45.4(2)*"d"* and other confidentiality concerns identified by the utility, the preapplication report will include the following information:

(1) 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.

(2) 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.

(3) 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.

(4) Available capacity (in MW) of substation/area bus, bank, or 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).

(5) Substation nominal distribution voltage or transmission nominal voltage or both if applicable.

(6) Nominal distribution circuit voltage at the proposed point of interconnection.

(7) Approximate circuit distance between the proposed point of interconnection and the substation.

(8) Actual or estimated peak load and minimum load data, including daytime minimum load and absolute minimum load, when applicable, for relevant line sections.

(9) 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 and whether or not the substation has a load tap changer.

(10) Number of phases available at the proposed point of interconnection. If it is a single phase, distance from the three-phase circuit.

(11) Limiting conductor ratings from the proposed point of interconnection to the distribution substation.

(12) Whether the point of interconnection is located on a spot network, grid network, or radial supply.

(13) 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.

d. The preapplication report need only include existing data. A preapplication 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 preapplication report due to lack of available data, the utility shall provide the applicant with a preapplication report that includes the data that is available. The provision of information on "available capacity" pursuant to subparagraph 45.4(2)*"c"*(4) does not imply that an interconnection up to this level may be completed without impacts because there are many variables studied as part of the interconnection review process and data provided in the preapplication report may become outdated at the time of the submission of the complete interconnection request. Notwithstanding any of the provisions of this subrule, the utility shall, in good faith, include data in the preapplication report that represents the best available information at the time of reporting.

45.4(3) Utilities shall specify the fee by level that the applicant shall remit to process the interconnection request. The fee shall be specified in the interconnection request forms. The utilities shall not charge more than the fees as specified below:

a. Level 1 - $125 application fee and up to an additional $125 if the utility performs a witness test as specified in subrule 45.5(10).

b. Level 2 - $250 application fee plus $1 per kVA and up to an additional $125 if the utility performs a witness test as specified in subrule 45.5(10).

c. Level 3 - $500 application fee plus $2 per kVA.

d. Level 4 - $1,000 application fee plus $2 per kVA.

45.4(4) Interconnection requests may be submitted electronically, if agreed to by the parties.

199—45.5(476) General requirements.

45.5(1) When an interconnection request for a distributed generation facility includes multiple energy production devices at a site for which the applicant seeks a single point of interconnection, the interconnection request shall be evaluated on the basis of the aggregate nameplate capacity of the multiple devices.

45.5(2) When an interconnection request is for an increase in capacity for an existing distributed generation facility, the interconnection request shall be evaluated on the basis of the new total nameplate capacity of the distributed generation facility.

45.5(3) The utility will provide a designated point of contact with contact information on the utility's website. The point of contact will direct applicant questions concerning interconnection request submissions and the interconnection request process to knowledgeable individuals within the utility.

45.5(4) The information that the utility makes available to potential applicants can include previously existing utility studies that help applicants understand whether it is feasible to interconnect a distributed generation facility at a particular point on the utility's electric distribution system. However, the utility is not required to provide the information to the extent that providing it violates security requirements or confidentiality agreements, or is contrary to state or federal law. In appropriate circumstances, the utility may require a confidentiality agreement prior to release of this information.

45.5(5) When an interconnection request is deemed complete by the utility, any modification that is not agreed to by the utility requires submission of a new interconnection request.

45.5(6) The applicant shall provide, upon utility request, proof of the applicant's legal right to control the site(s) that may be demonstrated through:

a. Ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing, the distributed generation facility;

b. An option to purchase or acquire a leasehold site for such purpose; or

c. Exclusivity or other business relationship between the interconnection customer and the entity having the right to sell, lease, or grant the interconnection customer the right to possess or occupy a site for such purpose.

45.5(7) To minimize the cost to interconnect multiple distributed generation facilities, the utility or the applicant may propose a single point of interconnection for multiple distributed generation facilities located at an interconnection customer site that is on contiguous property. If the applicant rejects the utility's proposal for a single point of interconnection, the applicant shall pay any additional cost to provide a separate point of interconnection for each distributed generation facility. If the utility, without written technical explanation, rejects the customer's proposal for a single point of interconnection, the utility shall pay any additional cost to provide separate points of interconnection for each distributed generation facility.

45.5(8) Any metering required for a distributed generation interconnection shall be installed, operated, and maintained in accordance with the utility's metering rules and inspection and testing practices defined in 199—Chapter 20. Any such metering requirements shall be identified in the Level 1 Interconnection Request Application form and Distributed

Generation Interconnection Agreement or the Levels 2 to 4 Distributed Generation Interconnection Request Agreement executed between the interconnection customer and the utility.

45.5(9) Utility requirements for monitoring and control of distributed generation facilities are permitted only when the nameplate capacity rating is greater than 1 MVA. Monitoring and control requirements shall be reasonable, consistent with the utility's published requirements, and clearly identified in the interconnection agreement between the interconnection customer and the utility. Transfer trip is not considered utility monitoring and control when required and installed to protect the electric distribution system or an affected system against adverse system impacts.

45.5(10) The utility may require a witness test after the distributed generation facility is constructed. The applicant shall provide the utility with at least 15 business days' notice of the planned commissioning test for the distributed generation facility. The applicant and utility will schedule the witness test at a mutually agreeable time. If the witness test results are not acceptable to the utility, the applicant shall be granted 30 business days to address and resolve any deficiencies. The time period for addressing and resolving any deficiencies may be extended upon the mutual agreement of the utility and the applicant prior to the end of the 30 business days. An initial request for extension shall not be denied by the utility; subsequent requests may be denied. If the applicant fails to address and resolve the deficiencies to the utility's satisfaction, the interconnection request shall be deemed withdrawn. Even if the utility or an entity approved by the utility does not witness a commissioning test, the applicant remains obligated to satisfy the interconnection test specifications and requirements set forth in IEEE Standard 1547, Section 11. The applicant shall, if requested by the utility, provide a copy of all documentation in its possession regarding testing conducted pursuant to IEEE Standard 1547.1.

199—45.6(476) Lab-certified equipment. An interconnection request may be eligible for expedited interconnection review under rule 199—45.8(476), 199—45.9(476), or 199—45.10(476) (as described in rule 199—45.7(476)) if the distributed generation facility uses interconnection equipment that is lab-certified.

45.6(1) Interconnection equipment is deemed lab-certified if:

a. The interconnection equipment has been successfully tested in accordance with IEEE Standard 1547.1 (as appropriate for lab testing) or complies with UL Standard 1741, as demonstrated by any NRTL recognized by OSHA to test and certify interconnection equipment;

b. The interconnection equipment has been labeled and is publicly listed by the NRTL at the time of the interconnection application;

c. The applicant's proposed use of the interconnection equipment falls within the use or uses for which the interconnection equipment was labeled and listed by the NRTL; and

d. The generator, other electric sources, and interface components being utilized are compatible with the interconnection equipment and are consistent with the testing and listing specified by the NRTL for this type of interconnection equipment.

45.6(2) Lab-certified interconnection equipment does not require further design testing or production testing, as specified by IEEE Standard 1547, Section 11, or additional interconnection equipment modification to meet the requirements for expedited review; however, the applicant shall conduct all commissioning tests or periodic testing as specified by IEEE Standard 1547, Section 11. The utility may conduct additional witness tests, but no more frequently than annually.

199—45.7(476) Determining the review level. A utility shall determine whether an interconnection request should be processed under the Level 1, 2, 3, or 4 procedures by using the following screens.

45.7(1) Level 1 procedures are used to evaluate all interconnection requests to connect a distributed generation facility when:

a. The applicant has filed a Level 1 application;

b. The distributed generation facility has a nameplate capacity rating of 20 kVA or less;

c. The distributed generation facility is inverter-based;

d. The customer interconnection equipment proposed for the distributed generation facility is lab-certified; and

e. The utility is not required to construct facilities to accommodate the distributed generation facility.

45.7(2) Level 2 procedures are used for evaluating interconnection requests when:

a. The applicant has filed a Level 2 application;

b. The nameplate capacity rating is 2 MVA or less for non-inverter-based systems. The Level 2 eligibility for inverter-based systems can be based on the following table.

Line Voltage	Level 2 Eligibility Regardless of Location	Level 2 Eligibility on a Mainline and < 2.5 Electrical Circuit Miles from Substation
< 5 kV	< 500 kVA	< 500 kVA
> 5 kV and < 15 kV	< 2 MVA	< 3 MVA
> 15 kV and < 30 kV	< 3 MVA	< 4 MVA
> 30 kV and < 69 kV	< 4 MVA	< 5 MVA

For purposes of this table, a mainline is the three-phase backbone of a circuit;

c. The interconnection equipment proposed for the distributed generation facility is lab-certified;

d. The proposed interconnection is to a radial distribution circuit or a spot network limited to serving one customer; and

e. The utility is not required to construct facilities to accommodate the distributed generation facility, other than minor modifications provided for in subrule 45.9(6).

45.7(3) Level 3 review procedures are used for evaluating interconnection requests to area networks and radial distribution circuits where power will not be exported based on the following criteria.

a. For interconnection requests to the load side of an area network, the following criteria shall be satisfied to qualify for a Level 3 expedited review:

(1) The applicant has filed a Level 3 application;

(2) The nameplate capacity rating of the distributed generation facility is 50 kVA or less;

(3) The proposed distributed generation facility uses a lab-certified, inverter-based equipment package;

(4) The distributed generation facility will use reverse power relays or other protection functions that prevent the export of power into the area network;

(5) The aggregate of all generation on the area network does not exceed the lower of 5 percent of an area network's maximum load or 50 kVA; and

(6) The utility is not required to construct facilities to accommodate the distributed generation facility.

b. For interconnection requests to a radial distribution circuit, the following criteria shall be satisfied to qualify for a Level 3 expedited review:

(1) The applicant has filed a Level 3 application;

(2) The aggregated total of the nameplate capacity ratings of all of the generators on the circuit, including the proposed distributed generation facility, is 10 MVA or less;

(3) The distributed generation facility will use reverse power relays or other protection functions that prevent power flow onto the electric distribution system;

(4) The distributed generation facility is not served by a shared transformer; and

(5) The utility is not required to construct facilities on its own system to accommodate the distributed generation facility.

45.7(4) Level 4 study review procedures are used for evaluating interconnection requests when:

a. The applicant has filed a Level 4 application;

b. The nameplate capacity rating of the small generation facility is 10 MVA or less; and

c. Not all of the interconnection equipment or distributed generation facilities being used for the application are lab-certified.

199—45.8(476) Level 1 expedited review. A utility shall use the Level 1 interconnection review procedures for an interconnection request that meets the requirements specified in subrule 45.7(1). A utility will not impose additional requirements on Level 1 reviews that are not specifically authorized under this rule or rule 199—45.3(476) unless the applicant agrees.

45.8(1) The utility shall evaluate the potential for adverse system impacts using the following screens, which shall be satisfied:

a. For interconnection of a proposed distributed generation facility to a radial distribution circuit, the total distributed generation connected to the distribution circuit, including the proposed distributed generation facility, will not exceed 15 percent of the maximum load normally supplied by the distribution circuit.

b. For interconnection within a spot network, the distributed generation facility must use a minimum import relay or other protective scheme that will ensure that power imported from the utility to the network will, during normal utility

operations, remain above 1 percent of the network's maximum load over the past year, or will remain above a point reasonably set by the utility in good faith. At the utility's discretion, the requirement for minimum import relays or other protective schemes may be waived and alternative screening criteria may be applied.

c. When a proposed distributed generation facility is to be interconnected on a single-phase shared secondary line, the aggregate generation capacity on the shared secondary line, including the proposed distributed generation facility, does not exceed 20 kVA.

d. When a proposed distributed generation facility is single-phase and is to be interconnected on a center tap neutral of a 240-volt service, its addition will not create an imbalance between the two sides of the 240-volt service of more than 20 percent of the nameplate rating of the service transformer.

The utility is not required to construct facilities on its own system to accommodate the distributed generation facility's interconnection.

45.8(2) The Level 1 interconnection utilizes the following procedures:

a. The applicant submits an interconnection request using the Level 1 Interconnection Request Application form and Distributed Generation Interconnection Agreement along with the Level 1 application fee.

b. Within seven business days after receipt of the interconnection request, the utility shall inform the applicant whether the interconnection request is complete. If the request is incomplete, the utility shall specify what information is missing and the applicant has ten business days after receiving notice from the utility to provide the missing information or the interconnection request shall be deemed withdrawn.

c. Within 15 business days after the utility notifies the applicant that its interconnection request is complete, the utility shall verify whether the distributed generation facility passes all the relevant Level 1 screens.

d. If the utility determines and demonstrates that a distributed generation facility does not pass all relevant Level 1 screens, the utility shall provide a letter to the applicant explaining the reasons that the facility did not pass the screens.

e. Otherwise, the utility shall approve the interconnection request and provide to the applicant a signed version of the standard Conditional Agreement to Interconnect Distributed Generation Facility in the Level 1 Interconnection Request Application form and Distributed Generation Interconnection Agreement subject to the following conditions:

(1) The distributed generation facility has been approved by local or municipal electric code officials with jurisdiction over the interconnection;

(2) The Certificate of Completion form has been returned to the utility. Completion of local inspections may be designated on inspection forms used by local inspecting authorities;

(3) The witness test has either been successfully completed or waived by the utility in accordance with Section (2)(c)(ii) of the Terms and Conditions for Interconnection in the Level 1 Interconnection Request Application form and Distributed Generation Interconnection Agreement; and

(4) The applicant has signed the standard Conditional Agreement to Interconnect Distributed Generation Facility in the Level 1 Interconnection Request Application form and Distributed Generation Interconnection Agreement. When an applicant does not sign the agreement within 30 business days after receipt of the agreement from the utility, the interconnection request is deemed withdrawn unless the applicant requests to have the deadline extended for no more than 15 business days. An initial request for extension shall not be denied by the utility, but subsequent requests may be denied.

f. If a distributed generation facility is not approved under a Level 1 review and the utility's reasons for denying Level 1 status are not subject to dispute, the applicant may submit a new interconnection request for consideration under Level 2, Level 3, or Level 4 procedures. The date of the completed Level 1 interconnection request shall be retained and used to determine the review order position for subsequent Level 2 to 4 applications, provided the applicant makes the request within 15 business days after being notified that the Level 1 interconnection request is denied.

199—45.9(476) Level 2 expedited review. A utility shall use the Level 2 review procedure for interconnection requests that meet the Level 2 criteria in subrule 45.7(2). A utility will not impose additional requirements for Level 2 reviews that are not specifically authorized under this rule or rule 199—45.3(476) or subrule 45.5(9) unless the applicant agrees.

45.9(1) The utility shall evaluate the potential for adverse system impacts using the following screens, which shall be satisfied:

a. For interconnection of a proposed distributed generation facility to a radial distribution circuit, the total distributed generation connected to the distribution circuit, including the proposed distributed generation facility, will not exceed 15 percent of the maximum normal load normally supplied by the distribution circuit.

b. For interconnection of a proposed distributed generation facility within a spot network, the proposed distributed generation facility must be inverter-based and use a minimum import relay or other protective scheme that will ensure that power imported from the utility to the network will, during normal utility operations, remain above 1 percent of the network's maximum load over the past year, or will remain above a point reasonably set by the utility in good faith. At the utility's discretion, the requirement for minimum import relays or other protective schemes may be waived and alternative screening criteria may be applied.

c. The proposed distributed generation facility, in aggregation with other generation on the distribution circuit, will not contribute more than 10 percent to the distribution circuit's maximum fault current at the point on the primary line nearest the point of interconnection.

d. Any proposed distributed generation facility, in aggregate with other generation on the distribution circuit, shall not cause any electric utility distribution devices to be exposed to fault currents exceeding 90 percent of the electric utility distribution devices' short-circuit interrupting capability. Interconnection of a non-inverter-based distributed generation facility will not occur under Level 2 if equipment on the utility's distribution circuit is already exposed to fault currents of between 90 and 100 percent of the utility's equipment short-circuit interrupting capability. However, if fault currents exceed 100 percent of the utility's equipment short-circuit interrupting capability even without the distributed generation being interconnected, the utility shall replace the equipment at its own expense, and interconnection may proceed under Level 2.

e. When a customer-generator facility is to be connected to 3-phase, 3-wire primary utility distribution lines, a 3-phase or single-phase generator shall be connected phase-to-phase.

f. When a customer-generator facility is to be connected to 3-phase, 4-wire primary utility distribution lines, a 3-phase or single-phase generator shall be connected line-to-neutral and shall be grounded.

g. When the proposed distributed generation facility is to be interconnected on a single-phase shared secondary line, the aggregate generation capacity on the shared secondary line, including the proposed distributed generation facility, will not exceed 20 kVA.

h. When a proposed distributed generation facility is single-phase and is to be interconnected on a center tap neutral of a 240-volt service, its addition will not create an imbalance between the two sides of the 240-volt service of more than 20 percent of the nameplate rating of the service transformer.

i. A distributed generation facility, in aggregate with other generation interconnected to the distribution side of a substation transformer feeding the circuit where the distributed generation facility proposes to interconnect, will not exceed 10 MVA in an area where there are transient stability limitations to generating units located in the general electrical vicinity, as publicly posted by the MRO, the SERC, the MISO or the SPP.

j. Except as permitted by additional review in subrule 45.9(6), the utility shall not be required to construct any facilities on its own system to accommodate the distributed generation facility's interconnection.

45.9(2) The Level 2 interconnection shall use the following procedures:

a. The applicant submits an interconnection request using the Levels 2 to 4 Interconnection Request Application form along with the Level 2 application fee.

b. Within ten business days after receiving the interconnection request, the utility shall inform the applicant as to whether the interconnection request is complete. If the request is incomplete, the utility shall specify what materials are missing and the applicant has ten business days to provide the missing information or the interconnection request shall be deemed withdrawn.

c. After an interconnection request is deemed complete, the utility shall assign a review order position based upon the date that the interconnection request is determined to be complete. The utility shall then inform the applicant of its review order position.

d. If, after determining that the interconnection request is complete, the utility determines that it needs additional information to evaluate the distributed generation facility's adverse system impact, it shall request this information. The utility will not restart the review process or alter the applicant's review order position because it requires the additional information. The utility can extend the time to finish its evaluation only to the extent of the delay required for receipt of the additional information. If the additional information is not provided by the applicant within 15 business days, the interconnection request shall be deemed withdrawn.

e. Within 20 business days after the utility notifies the applicant it has received a completed interconnection request, the utility shall:

(1) Evaluate the interconnection request using the Level 2 screening criteria; and

(2) Provide the applicant with the utility's evaluation, including a written technical explanation. If a utility does not have a record of receipt of the interconnection request and the applicant can demonstrate that the original interconnection request was delivered, the utility shall complete the evaluation of the interconnection request within 20 business days after applicant's demonstration.

45.9(3) When a utility determines that the interconnection request passes the Level 2 screening criteria, or the utility determines that the distributed generation facility can be interconnected safely and will not cause adverse system impacts, even if the facility fails one or more of the Level 2 screening criteria, the utility shall provide the applicant with the Levels 2 to 4 Distributed Generation Interconnection Agreement within three business days of the date the utility makes its determination.

45.9(4) Within 30 business days after the utility issues the Levels 2 to 4 Distributed Generation Interconnection Agreement, the applicant shall sign and return the agreement to the utility. If the applicant does not sign and return the agreement within 30 business days, the interconnection request shall be deemed withdrawn unless the applicant requests a 15-business-day extension in writing before the end of the 30-day period. The initial request for extension will not be denied by the utility. When the utility conducts an additional review under the provisions of subrule 45.9(6), the interconnection of the distributed generation facility shall proceed according to milestones agreed to by the parties in the Levels 2 to 4 Distributed Generation Interconnection Agreement.

45.9(5) The Levels 2 to 4 Distributed Generation Interconnection Agreement is not final until:

a. All requirements in the agreement are satisfied;

b. The distributed generation facility is approved by the electric code officials with jurisdiction over the interconnection;

c. The applicant provides the Certificate of Completion form to the utility. Completion of local inspections may be designated on inspection forms used by local inspecting authorities; and

d. The witness test has either been successfully completed or waived by the utility in accordance with Article 2.1.1 of the Levels 2 to 4 Distributed Generation Interconnection Agreement.

45.9(6) Supplemental review may be appropriate when a distributed generation facility fails to meet one or more of the Level 2 screens. The utility shall offer to perform a supplemental review to determine whether there are minor modifications to the distributed generation facility or electric distribution system that would enable the interconnection to be made safely without causing adverse system impacts. 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 nonbinding 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 time frame, the interconnection request shall continue to be evaluated under the applicable study process unless it is withdrawn by the applicant.

a. The applicant may specify the order in which the utility will complete the screens described in paragraph 45.9(6)*"d."*

b. The applicant is responsible for the utility's actual costs for conducting the supplemental review. The applicant must pay any supplemental 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 date of the invoice without interest.

c. Within 30 business days following receipt of the deposit for a supplemental review, the utility shall:

(1) Perform a supplemental review using the screens set forth below;

(2) Notify the applicant in writing of the results; and

(3) Provide copies of the analysis and data underlying the utility's determinations based on the screens.

d. 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 a supplemental review, the utility shall notify the applicant following the failure of any of the screens; or, if the utility is unable to perform the screen described in subparagraph 45.9(6)*"d"*(1) within 2 business days of making such determination, the utility shall obtain the applicant's permission to: (a) continue evaluating the proposed interconnection under this subparagraph; (b) terminate the supplemental review and continue evaluating the small generating facility; or (c) terminate the supplemental review upon withdrawal of the interconnection request by the applicant.

(1) Minimum Load Screen: Where 12 months of line section minimum load data (including onsite load but not station service load served by the proposed small generating facility) are available, can be calculated, can be estimated from existing data, or can be 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 paragraph 45.9(6)*"c"* above.

1. 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 types of generation use absolute minimum load.

2. 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.

3. 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.

(2) Voltage and Power Quality Screen: In aggregate with existing generation on the line section: (1) the voltage regulation on the line section can be maintained in compliance with relevant requirements under all system conditions; (2) the voltage fluctuation is within acceptable limits as defined by the IEEE Standard 1453-2022, as approved on June 16, 2022, or utility practice similar to IEEE Standard 1453; and (3) the harmonic levels meet IEEE Standard 519-2022, as approved on May 13, 2022, limits.

(3) 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.

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

2. Whether the load along the line section is uniform or even.

3. 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.

4. 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.

5. 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.

6. 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.

e. If the proposed interconnection passes the supplemental screens described in subparagraphs 45.9(6)*"d"*(1), (2), and (3), the interconnection request shall be approved and the utility will provide the applicant with an executable interconnection agreement within the time frames established in paragraphs 45.9(6)*"f"* and *"g."* If the proposed interconnection fails any of the supplemental review screens and the applicant does not withdraw the applicant's interconnection request, the applicant shall continue to be evaluated under the Level 4 study process consistent with rule 199—45.11(476).

f. If the proposed interconnection passes the supplemental screens described in subparagraphs 45.9(6)*"d"*(1), (2), and (3) and does not require construction of facilities by the utility on the utility's own system, the interconnection agreement shall be provided within 10 business days after the notification of the supplemental review results.

g. If interconnection facilities or minor modifications to the utility's system are required for the proposed interconnection to pass the supplemental screens described in subparagraphs 45.9(6)*"d"*(1), (2), and (3) and the applicant agrees to pay for the modifications to the utility's electric system, the interconnection agreement, along with a nonbinding good-faith estimate for the interconnection facilities or minor modifications or both, shall be provided to the applicant within 15 business days after receiving written notification of the supplemental review results.

h. If the proposed interconnection would require more than interconnection facilities or minor modifications to the utility's system to pass the supplemental screens described in subparagraphs 45.9(6)*"d"*(1), (2), and (3), the utility shall notify the applicant at the same time the utility 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 the applicant's small generating facility.

45.9(7) If the distributed generation facility is not approved under a Level 2 review, the utility shall provide the applicant with written notification explaining the utility's reasons for denying the interconnection request. The applicant may submit a new interconnection request for consideration under a Level 4 interconnection review. The review order position assigned to the Level 2 interconnection request shall be retained, provided that the request is made by the applicant within 15 business days after notification that the current interconnection request is denied.

199—45.10(476) Level 3 expedited review. A utility shall use the Level 3 expedited review procedure for an interconnection request that meets the criteria in subrule 45.7(3) or 45.7(4). A utility will not impose additional requirements for Level 3 reviews not specifically authorized under this rule or rule 199—45.3(476) unless the applicant agrees.

45.10(1) A Level 3 interconnection will utilize the following procedures:

a. The applicant will submit an interconnection request using the Levels 2 to 4 Interconnection Request Application form along with the Level 3 application fee.

b. Within ten business days after receiving the interconnection request, the utility shall inform the applicant as to whether the interconnection request is complete. If the request is incomplete, the utility shall specify what materials are missing and the applicant has ten business days to provide the missing information, or the interconnection request shall be deemed withdrawn.

c. After an interconnection request is deemed complete, the utility shall assign a review order position to it based upon the date the interconnection request is determined to be complete. The utility shall then inform the applicant of its review order position.

d. If, after determining that the interconnection request is complete, the utility determines that the utility needs additional information to evaluate the distributed generation facility's adverse system impact, the utility shall request this information. The utility will not restart the review process or alter the applicant's review order position because the utility requires the additional information. The utility can extend the time to finish its evaluation only to the extent the delay is required for receipt of the additional information. If this additional information is not provided by the applicant within 15 business days, the interconnection request shall be deemed withdrawn.

e. Interconnection requests meeting the requirements set forth in paragraph 45.7(3)*"a"* for nonexporting distributed generation facilities interconnecting to an area network are presumed to be appropriate for interconnection. The utility shall process the interconnection requests using the following procedures:

(1) The utility shall evaluate the interconnection request under Level 2 interconnection review procedures as set forth in subrule 45.9(1) except that the utility has 25 business days to evaluate the interconnection request against the screens to determine whether interconnecting the distributed generation facility to the utility's area network has any potential adverse system impacts.

(2) If the Level 2 screens for area networks identify potential adverse system impacts, the utility may determine at its sole discretion that it is inappropriate for the distributed generation facility to interconnect to the area network under Level 3 review, and the interconnection request is denied. The applicant may submit a new interconnection request for consideration under Level 4 procedures at the review order position assigned to the Level 3 interconnection request, if the request is made within 15 business days after notification that the current application is denied.

f. For interconnection requests that meet the requirements of paragraph 45.7(3)*"b"* for nonexporting distributed generation facilities interconnecting to a radial distribution circuit, the utility shall evaluate the interconnection request under the Level 2 expedited review in subrule 45.9(1), except for the screen in paragraph 45.9(1)*"a."*

45.10(2) For a distributed generation facility that satisfies the criteria in paragraph 45.10(1)*"e"* or *"f,"* the utility shall approve the interconnection request and provide the applicant with the Levels 2 to 4 Distributed Generation Interconnection Agreement within three business days of the date the utility makes its determination.

45.10(3) Within 30 business days after the utility issues the Levels 2 to 4 Distributed Generation Interconnection Agreement, the applicant will complete, sign, and return the agreement to the utility. If the applicant does not sign the agreement within 30 business days, the request shall be deemed withdrawn, unless the applicant requests a 15-business-day extension in writing before the end of the 30-day period. An initial request for extension will not be denied by the utility. After the agreement is signed by the parties, interconnection of the distributed generation facility shall proceed according to any milestones agreed to by the parties in the Levels 2 to 4 Distributed Generation Interconnection Agreement.

45.10(4) The Levels 2 to 4 Distributed Generation Interconnection Agreement is not final until:

a. All requirements in the agreement are satisfied; and

b. The distributed generation facility is approved by the electric code officials with jurisdiction over the distributed generation facility; and

c. The applicant provides the Certificate of Completion form to the utility; and

d. The witness test has either been successfully completed or waived by the utility in accordance with Article 2.1.1 of the Levels 2 to 4 Distributed Generation Interconnection Agreement.

45.10(5) If the distributed generation facility is not approved under a Level 3 review, the utility shall provide the applicant with written notification explaining the utility's reasons for denying the interconnection request. The applicant may submit a new interconnection request for consideration under a Level 4 interconnection review. The review order position assigned to the Level 3 interconnection request shall be retained, provided that the request is made within 15 business days after notification that the current interconnection request is denied.

199—45.11(476) Level 4 review. A utility shall use the following Level 4 study review procedures for an interconnection request that meets the criteria in subrule 45.7(4).

45.11(1) The applicant submits an interconnection request using the Levels 2 to 4 Interconnection Request Application form along with the Level 4 application fee.

45.11(2) Within ten business days after receipt of an interconnection request, the utility shall notify the applicant whether the request is complete. When the interconnection request is not complete, the utility shall provide the applicant with a written list detailing the information required to complete the interconnection request. The applicant has ten business days to provide the required information or the interconnection request is considered withdrawn. The parties may agree to extend the time for receipt of the additional information. The interconnection request is deemed complete when the required information has been provided by the applicant, or the parties have agreed that the applicant may provide additional information at a later time.

45.11(3) After an interconnection request is deemed complete, the utility shall assign a review order position to it based upon the date the interconnection request is determined to be complete. When assigning a review order position, a utility may consider whether there are any other interconnection projects on the same distribution circuit. If there are other interconnection projects on the same distribution circuit, the utility may consider them together. If a utility assigns a review order position based on the existence of interconnection projects on the same distribution circuit, the utility shall notify the applicant of that fact when the utility assigns the review order position. The review order position of an interconnection request is used to determine the cost responsibility for the facilities necessary to accommodate the interconnection. The utility shall notify the applicant as to the applicant's position in the review order. If the interconnection request is subsequently amended, the applicant shall receive a new review order position based on the date that the interconnection request was amended.

45.11(4) Level 4 study review procedures. After the interconnection request has been assigned to the review order, a Level 4 study review shall be conducted:

a. Waiver or combination of standard Level 4 study review procedures. By mutual agreement of the parties in writing, the scoping meeting, feasibility study, system impact study, or facilities study in paragraph 45.11(4)*"b"* may be waived or combined with other studies. Otherwise, the standard Level 4 study review procedures in paragraph 45.11(4)*"b"* shall apply.

b. Standard Level 4 study review procedures include:

(1) Scoping meeting. Unless waived or combined with other studies pursuant to paragraph 45.11(4)*"a,"* a scoping meeting shall be held with the applicant on a mutually agreed-upon date and time, after the utility has notified the applicant that the Level 4 interconnection request is deemed complete, or after the applicant has requested that the applicant's interconnection request proceed under Level 4 review after failing the requirements of a Level 1, Level 2, or Level 3 review. The purpose of the meeting is to review the interconnection request, any existing studies relevant to the interconnection request, and the results of any Level 1, Level 2, or Level 3 screening criteria.

(2) Feasibility study. Unless waived or combined with other studies pursuant to paragraph 45.11(4)*"a,"* an interconnection feasibility study (subrule 45.11(5)) shall be performed.

1. The utility shall provide the applicant a copy of the Interconnection Feasibility Study Agreement or a mutually agreed-upon alternative form, plus a description of the study and a nonbinding estimate of the cost to perform the study.

2. The utility shall provide the study agreement and information no later than ten business days after the following have occurred, as applicable:

- Receipt of a complete interconnection request; and

- The scoping meeting (if held).

3. If the applicant does not sign and return the study agreement with payment of the estimated costs of the study within 15 business days, the application shall be deemed withdrawn.

(3) System impact study. Unless waived or combined with other studies pursuant to paragraph 45.11(4)*"a,"* an interconnection system impact study (subrule 45.11(6)) shall be performed.

1. The utility shall provide the applicant a copy of the Interconnection System Impact Study Agreement or a mutually agreed-upon alternative form, plus an outline of the scope of the study and a nonbinding estimate of the cost to perform the study.

2. The utility shall provide the study agreement and information no later than ten business days after the following have occurred, as applicable:

- Receipt of a complete interconnection request;
- The scoping meeting (if held); and
- Transmittal of the interconnection feasibility study (if performed).

3. If the applicant does not sign and return the study agreement with payment of the estimated costs of the study within 15 business days, the application shall be deemed withdrawn.

(4) Facilities study. Unless waived or combined with other studies pursuant to paragraph 45.11(4)*"a,"* an interconnection facilities study (subrule 45.11(7)) shall be performed.

1. The utility shall provide the applicant a copy of the Interconnection Facilities Study Agreement or a mutually agreed-upon alternative form, plus an outline of the scope of the study and a nonbinding estimate of the cost to perform the study.

2. The utility shall provide the study agreement and information no later than ten business days after the following have occurred, as applicable:

- Receipt of a complete interconnection request;
- The scoping meeting (if held);
- Transmittal of the interconnection feasibility study (if performed); and
- Transmittal of the interconnection system impact study (if performed).

3. If the applicant does not sign and return the study agreement with payment of the estimated costs of the study within 15 business days, the application is deemed withdrawn.

45.11(5) Interconnection feasibility study.

a. Unless waived or combined with other studies by agreement of the parties pursuant to paragraph 45.11(4)*"a,"* the interconnection feasibility study shall include any necessary analyses for the purpose of identifying potential adverse system impacts to the utility's electric system that would result from the interconnection from among the following:

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

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

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

b. Before performing the study, the utility shall provide the applicant a description of the study and a nonbinding estimate of the cost to perform the study.

c. If an applicant requests that the interconnection feasibility study evaluate multiple potential points of interconnection, additional evaluations may be required that will be paid for by the applicant.

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

e. Either party can require that the Interconnection Feasibility Study Agreement be used. However, if both parties agree, an alternative form can be used.

45.11(6) Interconnection system impact study. An interconnection system impact study evaluates the impact of the proposed interconnection on both the safety and reliability of the utility's electric distribution system. The interconnection impact study identifies and details the system impacts that interconnecting the distributed generation facility to the utility's electric system has if there are no system modifications. The interconnection system impact study focuses on the potential or actual adverse system impacts identified in the interconnection feasibility study, including those that were identified in the scoping meeting. The interconnection system impact study shall consider all other distributed generation facilities that, on the date the interconnection system impact study is commenced, are directly interconnected with the utility's system, have a pending higher review order position to interconnect to the electric distribution system, or have signed an

interconnection agreement. The utility shall coordinate with any affected system owners regarding potential impacts to affected systems in a timely manner and include the results of such studies along with the system impacts study.

a. Unless waived or combined with other studies by agreement of the parties pursuant to paragraph 45.11(4)*"a,"* an interconnection system impact study shall be performed when either a potential adverse system impact is identified in the interconnection feasibility study, or an interconnection feasibility study has not been performed. Before performing the interconnection feasibility study, the utility shall provide the applicant an outline of the scope of the study and a nonbinding estimate of the cost to perform the study. The interconnection system impact study shall include any pertinent elements from among the following:

(1) A load flow study;
(2) Identification of affected systems and any subsequent affected system study;
(3) An analysis of equipment interrupting ratings;
(4) A protection coordination study;
(5) Voltage drop and flicker studies;
(6) Protection and set point coordination studies;
(7) Grounding reviews; and
(8) Impact on system operation.

b. An interconnection system impact study shall consider any necessary criteria from among the following:

(1) A short-circuit analysis;
(2) A stability analysis;
(3) Alternatives for mitigating adverse system impacts on affected systems;
(4) Voltage drop and flicker studies;
(5) Protection and set point coordination studies;
(6) Grounding reviews; and
(7) Results from the affected system study.

c. The final interconnection system impact study shall provide the following:

(1) The underlying assumptions of the study;
(2) The results of the analyses;
(3) A list of any potential impediments to providing the requested interconnection service;
(4) Required distribution upgrades; and
(5) A nonbinding estimate of cost and time to construct any required distribution upgrades.

d. Either party can require that the Interconnection System Impact Study Agreement be used. However, if both parties agree, an alternative form can be used.

45.11(7) Interconnection facilities study. Unless waived or combined with other studies by agreement of the parties pursuant to paragraph 45.11(4)*"a,"* an interconnection facilities study shall be performed as follows:

a. Before performing the interconnection facilities study, the utility shall provide the applicant an outline of the scope of the study and a nonbinding estimate of the cost to perform the study.

b. The interconnection facilities study shall estimate the cost of the equipment, engineering, procurement and construction work, including overheads, needed to implement the conclusions of the interconnection feasibility study and the interconnection system impact study. The interconnection facilities study shall identify:

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

(2) The nature and estimated cost of the utility's interconnection facilities and distribution upgrades necessary to accomplish the interconnection; and

(3) An estimate for the time required to complete the construction and installation of the interconnection facilities and distribution upgrades.

c. The utility may agree to permit an applicant to arrange separately for a third party to design and construct the required interconnection facilities. In such a case, when the applicant agrees to separately arrange for design and construction, and to comply with security and confidentiality requirements, the utility shall make all relevant information and required specifications available to the applicant to permit the applicant to obtain an independent design and cost estimate for the facilities, which shall be built in accordance with the utility's specifications.

d. Upon completion of the interconnection facilities study, and after the applicant agrees to pay for the interconnection facilities and distribution upgrades identified in the interconnection facilities study, the utility shall provide the applicant

with the Levels 2 to 4 Distributed Generation Interconnection Agreement within three business days of the date the utility makes its determination.

e. In the event that distribution upgrades are identified in the interconnection system impact study that shall be added only in the event that customers with higher review order positions not yet interconnected eventually complete and interconnect the customers' generation facilities, the applicant may elect to interconnect without paying the estimate for such upgrades at the time of the interconnection, provided that the applicant pays for such upgrades prior to commencement of construction of such upgrades to be completed by the time the customer with higher review order position is ready to interconnect. If the applicant does not pay for such upgrades at that time, the utility shall require the applicant to immediately disconnect the applicant's distributed generation facility to accommodate the customer with higher review order position.

f. Either party can require that the Interconnection Facilities Study Agreement be used. However, if both parties agree, an alternative form can be used.

45.11(8) When a utility determines, as a result of the studies conducted under a Level 4 review, that it is appropriate to interconnect the distributed generation facility, the utility shall provide the applicant with the Levels 2 to 4 Distributed Generation Interconnection Agreement. If the interconnection request is denied, the utility shall provide the applicant with a written explanation as to the utility's reasons for denying interconnection. If denied, the interconnection request does not retain its position in the review order.

45.11(9) Within 30 business days after receipt of the Levels 2 to 4 Distributed Generation Interconnection Agreement, the applicant shall provide all necessary information required of the applicant by the agreement, and the utility shall develop all other information required of the utility by the agreement. After completing the agreement with the additional information, the utility will transmit the completed agreement to the applicant. Within 30 business days after receipt of the completed agreement, the applicant shall sign and return the completed agreement to the utility. If the applicant does not sign and return the agreement within 30 business days after receipt, the interconnection request shall be deemed withdrawn, unless the applicant requests in writing to have the deadline extended by no more than 15 business days, prior to the expiration of the 30-business-day period. The initial request for extension will not be denied by the utility. If the applicant does not sign and return the agreement after the 15-business-day extension, the interconnection request shall be deemed withdrawn. If withdrawn, the interconnection request does not retain its position in the review order. When construction is required, the interconnection of the distributed generation facility shall proceed according to milestones agreed to by the parties in the Levels 2 to 4 Distributed Generation Interconnection Agreement.

45.11(10) The Levels 2 to 4 Distributed Generation Interconnection Agreement is not final until:

a. The requirements of the agreement are satisfied; and

b. The distributed generation facility is approved by electric code officials with jurisdiction over the interconnection; and

c. The applicant provides the Certificate of Completion form to the utility. Completion of local inspections may be designated on inspection forms used by local inspecting authorities; and

d. The witness test has either been successfully completed or waived by the utility in accordance with Article 2.1.1 of the Levels 2 to 4 Distributed Generation Interconnection Agreement.

199—45.12(476) Disputes.

45.12(1) A party shall attempt to resolve all disputes regarding interconnection promptly and in a good-faith manner. A party shall provide prompt written notice of the existence of the dispute, including sufficient detail to identify the scope of the dispute, to the other party in order to attempt to resolve the dispute in a good-faith manner.

45.12(2) An informal meeting between the parties is to be held within ten business days after receipt of the written notice. Persons with decision-making authority from each party shall attend such meeting. In the event said dispute involves technical issues, persons with sufficient technical expertise and familiarity with the issue in dispute from each party shall also attend the informal meeting. If the parties agree, such a meeting may be conducted by teleconference.

45.12(3) Subsequent to the informal meeting referred to in subrule 45.12(2), a party may seek resolution of any disputes through the 199—Chapter 6 complaint procedures of the board. Dispute resolution under these procedures will initially be conducted informally under rules 199—6.2(476) through 199—6.4(476) to reach resolution with minimal 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 rule 199—6.5(476).

45.12(4) Pursuit of dispute resolution shall not affect an interconnection applicant with regard to consideration of an interconnection request or an interconnection applicant's position in the utility's interconnection review order.

199—45.13(476) Records and reports.

45.13(1) For each completed interconnection request received by the utility, the utility shall maintain records of the following for a minimum of three years:

a. The date the interconnection application was received as complete, the total AC nameplate capacity, and the fuel type of the distributed generation facility;

b. The level of review received (Level 1, Level 2, Level 3, or Level 4) and whether the project failed any initial screens, and if so and readily determinable, which screens; whether the facility received a supplemental review; and whether any impact or facility study was conducted;

c. Whether the interconnection was approved, denied, or withdrawn and the date of that action; and

d. Whether the facility is operational and, if so, the date the electric utility authorized the facility to begin operation.

45.13(2) Each utility shall file a report by May 1 of each year detailing the information required in subrule 45.13(1) for the previous calendar year.

45.13(3) Each utility shall retain copies of studies the utility performs to determine the feasibility of, system impacts of, or facilities required by the interconnection of any distributed generation facility. The utility shall provide the applicant copies of any studies performed in analyzing the applicant's interconnection request upon applicant request. However, a utility has no obligation to provide any future applicants any information regarding prior interconnection requests to the extent that providing the information would violate security requirements or confidentiality agreements, or is contrary to state or federal law. In appropriate circumstances, the utility may require a confidentiality agreement prior to release of this information.

These rules are intended to implement Iowa Code sections 476.1 and 476.8 and Section 211 of the Public Utilities Regulatory Policies Act of 1978 as amended by the Energy Policy Act of 2005.