

STATE OF IOWA
DEPARTMENT OF COMMERCE
UTILITIES BOARD

IN RE: INQUIRY INTO PURPA INTERCONNECTION STANDARD	DOCKET NO. NOI-06-4
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**ORDER ADOPTING, IN PART, STANDARD AND INVITING
COMMENTS ON PRELIMINARY CONCLUSIONS
AND PRELIMINARY MODEL INTERCONNECTION
PROCEDURES FOR RATE-REGULATED UTILITIES**

(Issued April 25, 2007)

I. INTRODUCTION

On August 8, 2005, the Energy Policy Act of 2005 (EPACT 2005) was signed into law. Among the many provisions of this federal legislation are five new federal ratemaking standards added to the Public Utility Regulatory Policies Act of 1978 (PURPA). The fifth of these new standards (commonly referred to as Standard 15), found in Section 211 of PURPA (16 U.S.C. 2621(d)), pertains to interconnection of distributed generation facilities.¹ Standard 15 provides that all state utility commissions must consider and make a determination whether to adopt the standard. Standard 15, if adopted by the Utilities Board (Board), would require each

¹ Specifically, the new PURPA Interconnection Standard adopted in 16 U.S.C. 2621(d)(15) states:
(15) Interconnection. Each electric utility shall make available, upon request, interconnection service to any electric consumer that the electric utility serves. For purposes of this paragraph, the term `interconnection service' means service to an electric consumer under which an on-site generating facility on the consumer's premises shall be connected to the local distribution facilities. Interconnection services shall be offered based upon the standards developed by the Institute of Electrical and Electronics Engineers: IEEE Standard 1547 for Interconnecting Distributed Resources with Electric Power Systems, as they may be amended from time to time. In addition, agreements and procedures shall be established whereby the services offered shall promote current best practices of interconnection for distributed generation, including but not limited to practices stipulated in model codes adopted by associations of state regulatory agencies. All such agreements and procedures shall be just and reasonable, and not unduly discriminatory or preferential.

rate-regulated utility to interconnect any customer's on-site generation (i.e., distributed generation) with the utility's local distribution facilities, based on Institute of Electrical and Electronics Engineers (IEEE) Standard 1547. Standard 15 also provides for, among other things, the establishment of non-discriminatory practices and procedures that promote the best practices of interconnection of distributed generation.

EPACT 2005 required that the Board commence a proceeding on or before August 8, 2006, to consider adopting Standard 15. The Board initiated this inquiry (Docket No. NOI-06-4) to address Standard 15 on July 3, 2006. EPACT 2005 provides that the Board may decline to adopt or implement the standard, but must state in writing the reasons for its decision.

The Board's current interconnection policy and procedures are in 199 IAC 15. The Board implemented interconnection rules for PURPA qualifying facilities (QFs) in 1981; the rules were amended in 1984 to include alternate energy production facilities (AEPs). Specifically, 199 IAC 15.4(3) requires rate-regulated utilities to interconnect with QFs; rule 15.8 requires QFs and AEPs to pay all costs associated with their interconnection with rate-regulated utilities; rule 15.10 applies to all utilities and includes minimum interconnection standards, including IEEE Standard 1547; 199 IAC 15.11(4) requires rate-regulated utilities to file standard AEP contract provisions for Board approval; and 199 IAC 15.2(2) provides that none of the requirements of 199 IAC 15 prevent a utility and an AEP or QF from agreeing on contract terms that vary from the rules' requirements. In general, the Board only becomes involved in the interconnection process if a complaint is filed.

Standard 15 has three requirements for the Board to consider. First, the Board must consider whether to broaden its interconnection requirements to include all forms of customer-owned on-site or distributed generation. Currently, the Board's requirements are limited to AEPs and QFs. Second, the Board must consider whether to adopt IEEE Standard 1547 as the technical basis for interconnection. Third, the Board must consider whether to revise its current rules on interconnection to reflect current best practices for interconnection agreements and procedures, such as the National Association of Regulatory Utility Commissioners' (NARUC) "Model Interconnection Procedures and Agreement for Small Distributed Generation Resources," referred to as the "NARUC Document".

The Board's July 3, 2006, order initiating this inquiry invited responses and comments to several questions. The following persons participated in the inquiry by filing comments: the Environmental Law and Policy Center, submitting comments on behalf of itself and the Distributed Generation Coalition (DG Coalition), Midwest Renewable Energy Projects LLC (Midwest Renewable), Interstate Power and Light Company (IPL), MidAmerican Energy Company (MidAmerican), the Iowa Association of Electric Cooperatives (IAEC), Ag Processing Inc (Ag Processing), and the Consumer Advocate Division of the Department of Justice (Consumer Advocate).

II. INQUIRY QUESTIONS

The inquiry questions were designed to elicit responses over six subject areas. The six subject areas addressed in the inquiry are:

1. Whether the Board has authority under current state law to expand utility interconnection requirements to include all forms of customer-owned generation.
2. Whether the Board's prior adoption of IEEE Standard 1547 is sufficient for meeting one aspect of Standard 15.
3. Whether the Board's complaint procedures found in 199 IAC 6 are sufficient for addressing customer problems with the utility's interconnection process.
4. Whether a utility's interconnection charges should be based on average or customer-specific costs, and whether interconnection costs should be recovered entirely from interconnecting customers.
5. Whether the NARUC Document's provisions on liability and insurance are appropriate.
6. Whether any other provisions of the NARUC Document should be adopted by the Board, added to, deleted, or modified, and whether any other issues should be addressed.

Participants should have received copies of each other's comments, so they will not be exhaustively summarized here. The Board will address each subject area separately. The Board will offer its preliminary conclusions based on the information it has reviewed in this inquiry to date and invite further comments, both on specific issues and any other aspect of the inquiry. In addition to the discussion in the order, the Board's preliminary conclusions are reflected in its "Preliminary Model Interconnection Procedures for Rate-Regulated Utilities," which is attached to this order as Appendix A and referred to as "Preliminary Model Procedures."

A. BOARD AUTHORITY

The first inquiry question was whether the Board has the authority under current state law to expand utility interconnection requirements to include all forms of customer-owned generation. The question was intended to address the first aspect of PURPA Standard 15, which is expansion of the interconnection requirement to include all forms of customer-owned generation.

All inquiry participants appear to agree that the Board has the authority under the broad powers contained in Iowa Code chapter 476 (and in particular Iowa Code § 476.2) to expand utility interconnection requirements to include all forms of customer-owned distributed generation, including non-PURPA QFs. However, no one seems to specifically advocate such an expansion, and Consumer Advocate and IAEC caution that other considerations should be taken into account before making such an expansion, such as whether the interconnection of non-PURPA QFs (including straight fossil-fuel based generation that does not efficiently cogenerate heat and power) works against rather than furthers the overall policy purposes of Iowa law and PURPA. These purposes include the conservation of energy and encouragement of renewable resources. The Board agrees with the comments and will not expand the interconnection requirement at this time. If expansion is warranted in the future, it should be limited to specific types of generation that further the policy reasons the laws seek to implement.

The inquiry question was framed as applying to utilities in general, rather than to rate-regulated utilities in particular, which raised an unanticipated issue: whether policy changes from the interconnection inquiry (and any subsequent implementing

dockets, such as a rule making proceeding) could apply to all utilities, including non-rate-regulated utilities (municipals and cooperatives) or to rate-regulated utilities only. Some participants support applying any policy changes to all utilities while others oppose the expansion.

The IAEC argues that the Board does not have the authority to order non-rate-regulated utilities to interconnect with non-PURPA QFs. Consumer Advocate, MidAmerican, and the DG Coalition state that interconnection requirements should be the same for all utilities (regulated and non-regulated). The DG Coalition states that only by applying interconnection standards to all utilities can the purposes of PURPA be fulfilled. The DG Coalition believes that the Board's broad authority under Chapter 476 is sufficient to require interconnection by all utilities.

The issue being argued is limited. First, it relates only to Board authority to order interconnection to distribution facilities; the Federal Energy Regulatory Commission (FERC) retains jurisdiction over transmission interconnections. Second, it relates only to non-PURPA QFs; the IAEC acknowledges that under federal law (PURPA), its members have a duty to interconnect on their distribution systems with PURPA QFs.

The Board's authority over non-rate-regulated utilities is limited. For cooperatives, the Board arguably has broader authority because cooperatives are subject to all of the Board's regulatory authority unless specifically excluded, while municipals are not subject to Board regulation unless specifically included. See Iowa Code §§ 476.1A and 476.1B. The Board's regulatory authority for both municipals and cooperatives extends to, among other things, safety standards, assigned areas

of service, and prohibition from discrimination against users of renewable energy resources (§ 476.21).

It is fair to say that the jurisdictional issue is unsettled, with arguments available for either side. The Board does not believe it is appropriate to extend its jurisdiction (if any) at this time. Those that advocate the Board extending its jurisdiction over interconnection to all utilities could seek a legislative solution that would end any debate over the extent of the Board's jurisdiction over non-rate-regulated utilities.

B. ADOPTION OF IEEE STANDARD 1547

As pointed out by several participants, the Board recognizes that its prior adoption of IEEE Standard 1547 does not address all three parts of PURPA Standard 15, but only the second part. All participants appear to agree in their comments that by adopting IEEE Standard 1547 in 199 IAC 15.10(1), the Board, through prior state action, has adopted the second part of PURPA Standard 15, which provides that:

Interconnection services shall be offered based upon the standards developed by the Institute of Electrical and Electronics Engineers: IEEE Standard 1547 for Interconnecting Distributed Resources with Electric Power Systems, as they may be amended from time to time.

The question about IEEE Standard 1547 led to comments on other related technical issues. Consumer Advocate suggests that the adoption of IEEE Standard 1547 results in five other standards specified in 199 IAC 15.10(1)"a" through "d" and "g," being redundant and unnecessary. MidAmerican disagrees because IEEE Standard 1547 does not explicitly reference the standards identified by Consumer

Advocate and does not apply to facilities larger than 10 MW. The Board will, for now, retain the standards cited by Consumer Advocate, in addition to IEEE Standard 1547.

MidAmerican proposes that the Board also adopt Underwriters Laboratories (UL) Standard 1741 and IEEE Standard 929 for inverter/converter technologies as part of the technical standards in subrule 15.10(1). No one else commented on this issue and the Board believes that adoption of these standards should be part of the Preliminary Model Procedures (Appendix A).

MidAmerican also proposes that a utility be allowed to adopt additional technical standards in its tariff based on the specific needs of the particular utility's system. No one specifically opposed MidAmerican's proposal, although it could result in different utilities having different interconnection requirements. Because utility systems might have different specific needs, the Board believes additional requirements beyond those found in 199 IAC 15.10 might be appropriate in some circumstances, but only if subject to prior approval by the Board.

The DG Coalition objects to certain interconnection requirements that it described as unnecessary, such as particular impact studies and disconnect switches. MidAmerican argues that disconnect switches are necessary equipment. After reviewing the information filed, the Board believes that disconnect switches provide an additional and reasonable layer of safety.

The DG Coalition's comments on what it views as needless impact studies appear to conflict with MidAmerican's proposal, discussed above, that a utility should be allowed to adopt additional interconnection standards and requirements as part of

its tariff. The arguments over technical standards raise two primary issues: whether the standards are necessary from an engineering perspective and whether the standards create financial barriers to interconnecting customers. The question of whether the standards are necessary from an engineering perspective should be resolved according to the technical merits of the standards. Based on technical merits, the Board believes it is appropriate to allow utilities to adopt reasonable requirements related to: disconnect switches, propose additional technical standards based on the unique aspects of the utility's system, and otherwise require compliance with 199 IAC 15.10, all subject to Board review.

The question of what financial barriers are imposed by the standards relates to the third part of PURPA Standard 15, current best practices for interconnection. Specifically, the question relates to whether interconnecting costs are to be recovered only from the interconnecting customers or from all utility customers. The Board will keep separate the questions of technical necessity and financial burden when considering what interconnection standards are appropriate.

The DG Coalition suggests that the Board should provide for pre-certification of equipment that meets IEEE Standard 1547 and UL Standard 1741 as a way to streamline the interconnection process for small facilities. No one specifically disagreed with the proposal and it seems reasonable to include this in the Preliminary Model Procedures (Appendix A), to the extent nationally-recognized testing and certification laboratories currently provide such certification. The Board invites additional comments on the certification that is currently available for such equipment and who provides the certification.

C. COMPLAINT PROCEDURES

The adequacy of the Board's complaint process to address customer complaints with the interconnection process relates to the third aspect of PURPA Standard 15, current best practices for interconnection. The participants' comments reflect general satisfaction with the Board's existing complaint process. The DG Coalition suggests supplementing the Board's complaint process with a collaborative process in an attempt to resolve disputes before complaint proceedings are initiated, but no details of the proposal were offered. The NARUC Document describes an expedited alternative dispute resolution process, but this process can be binding and may result in the process being less flexible than the Board's current complaint process.

While the DG Coalition believes the Board's complaint process is too adversarial, the Board notes that 199 IAC 6 contains both an informal and formal complaint process. The informal process is a fact-finding process involving the complainant, the utility, and the Board's staff. At the conclusion of the fact-finding (which is done via paper filings and does not involve a hearing), the Board's staff issues a proposed resolution. It is only when one party disagrees with the staff's proposed resolution that the complaint process may become a formal contested case proceeding. The informal process is quick, easy, and inexpensive. While significant expenses can be incurred in the formal complaint process, due process requirements demand that formal proceedings be held in appropriate cases. None of the participants have described any alternative procedures that would significantly

improve the Board's current procedures for resolving interconnection disputes or reduce the expenses incurred in the complaint process.

The Board does believe, though, that interconnection customers may not be aware of the Board's complaint process and how it works. The DG Coalition presents seven case studies in their comments illustrating problems experienced by interconnecting customers. The Board's customer service database shows no informal or formal complaints involving any of these customers. In addition, subrule 15.10(1) could be read to require contested case proceedings for resolving disputes involving a facility's output wave form. This was not the intent of the rule and the Board believes this sentence in the subrule should be deleted.

While deleting the last sentence of subrule 15.10(1) might improve somewhat an interconnecting customer's understanding of the complaint process, the Board believes more is necessary. The Preliminary Model Procedures (Appendix A) require that the utility identify specific customer contact personnel, provide interested persons copies of the utility's approved interconnection tariff (including standard application forms and agreements), and provide interested persons with copies of 199 IAC 15. The Preliminary Model Procedures (Appendix A) clarify that an interconnection applicant may seek resolution of an AEP or QF interconnection issue by filing a complaint under 199 IAC 6. If interconnecting customers are made aware of and understand the Board's complaint process, the Board believes they will see it as a valuable tool to use in resolving any disputes with the utility that may arise.

D. INTERCONNECTION COSTS

The question of interconnection costs relates to both how these costs are recovered (from the interconnecting customer or from all utility customers) and on what these costs are based (average or customer-specific costs). These issues relate to the third aspect of PURPA Standard 15, promotion of current best practices for interconnection.

Participants appear to agree that all costs associated with interconnection should be recovered from interconnecting customers only, not all utility customers, which is consistent with 199 IAC 15.8. Participants also seem to agree that interconnection costs should be based on a combination of average and customer-specific cost-based charges, with the basic application and review costs common to all interconnections recovered on an average basis, and non-typical review and other costs recovered on a customer-specific basis. IPL and MidAmerican also note that costs of system upgrades necessary to accommodate the interconnection should be included as interconnection costs.

The DG Coalition and Ag Processing emphasize the need for keeping up-front average charges low for small facilities. The DG Coalition favors a multi-tier system with average costs differentiated by size of the facility. No one specifically opposes the multi-tier system in their comments, which is used by Minnesota and Wisconsin. The Preliminary Model Procedures (Appendix A) sets forth a three-tiered set of application and review charges, with average charges differentiated according to facility capacity sizes in each tier range. Under the Preliminary Model Procedures (Appendix A), any additional costs involved in the interconnection process (based on

the necessity for more extensive review or equipment requirements) would be recovered directly from the individual interconnecting customers.

E. LIABILITY AND INSURANCE

Liability/indemnification and insurance both relate to promoting current best practices pursuant to the third part of PURPA Standard 15. Liability/Indemnification will be addressed first, followed by insurance.

1. Liability and Indemnity

Under the NARUC Document, each party assumes responsibility only for their own facilities and actions. Neither party is required to indemnify the other and each party's liability to the other is limited to direct damages actually caused by the other (indirect, special, consequential, and punitive damages are not available).

IPL, MidAmerican, and IAEC all object to NARUC's approach. IPL and IAEC argue that because interconnection is solely for the benefit of the interconnecting customer, any increased liability to the utility should be the responsibility of the interconnecting customer. Otherwise, as IPL notes, any claims exceeding the interconnecting customer's liability insurance limits would be assessed to the utility and, by default, to its customers.

MidAmerican's objection is premised on preserving current liability protections under its tariff and Iowa law. MidAmerican tariff sheet 36 exempts it from liability except for liability that is due to willful default or gross negligence. However, MidAmerican states that if the interconnecting customer's liability is likewise limited, this in effect increases MidAmerican's liability. MidAmerican points to Wisconsin's

liability and indemnification provisions as providing a reasonable starting point, provided current protections are maintained.

Consumer Advocate prefers the approach in the NARUC Document and points out that the liability provisions in MidAmerican's tariff may conflict with Iowa law because it shields MidAmerican from ordinary negligence liability. Consumer Advocate believes the purpose of the approach advocated by IPL, MidAmerican, and IAEC is to shield utilities from liability.

As a general approach, the Board believes it is reasonable to provide that the utility and interconnecting customer each assume responsibility for their own facilities and actions and that further indemnity provisions not be required. This general approach has been used successfully in Wisconsin and is endorsed by one of the inquiry participants, Midwest Renewable, and is applicable to Wisconsin Power and Light Company, IPL's sister utility in Wisconsin. However, a utility should also not lose any of its current protections afforded by its tariff and Iowa law (whatever those protections may be) by virtue of being required to interconnect generators. Therefore, it appears reasonable to add a provision for maintaining a utility's current liability protections under Iowa law and its tariff (to the extent the tariff is consistent with Iowa law). The following language is part of the Preliminary Model Procedures (Appendix A) and participants are invited to comment on the specific language:

The utility and the QF or AEP facility shall each indemnify, hold harmless, and defend the other party, its officers, directors, employees, and agents from and against any and all claims, suits, liabilities, damages, costs, and expenses resulting from the installation, operation, modification, maintenance, or removal of the facility, to the extent caused wholly or in part by the negligence or intentional wrongdoing of the indemnifying party. The

liability of each party shall be limited to direct actual damages and all other damages at law or in equity shall be waived. **The liability of the utility shall be further limited according to Iowa law and according to the liability standards specified in the utility's tariff to the extent the tariff standards are consistent with Iowa law.** (Emphasis added).

2. Insurance

The NARUC Document does not require the interconnecting customer to carry liability insurance for the customer's facilities. IPL, MidAmerican, and IAEC all argue that the interconnecting customers should be required to carry liability insurance because these customers present higher risks to utilities than other customers and the costs of those risks should be borne by the interconnecting customers, not all other customers of the utilities. All three commenters state that they require liability insurance, the amount of which is generally based on the size of the interconnecting facility. Midwest Renewable endorses a particular tiered approach used in Wisconsin.

The Board notes that while MidAmerican's and IPL's standard AEP tariff provisions (required under 199 IAC 15.11(4)) do not include provisions for liability insurance, a utility and the interconnecting customer may negotiate additional or non-standard terms. However, if there is no agreement, the utility cannot impose an additional or non-standard contract term without Board approval. Because the Board has never approved a liability insurance provision for an interconnection agreement involving IPL or MidAmerican, the Board assumes that any existing insurance provisions are the result of agreements between these utilities and the interconnecting customers.

The DG Coalition opposes liability insurance requirements and states there is no technical or historical evidence to support such a requirement, citing an article in which the authors state they are not aware of any instances of personal injury or property damage associated with interconnection and operation of customer-owned generation.² Although inquiry participants were asked to present any substantive information or studies to support a liability insurance requirement, the participants supporting an insurance requirement provided none. Consumer Advocate believes this lack of substantive support for an insurance requirement, and the fact that several states have no insurance requirement, suggests that the issue should be thoroughly reviewed before an insurance requirement is imposed.

The Board is not convinced by this record that liability insurance should be required. As noted by the DG Coalition, any potential risk that might exist is greatly reduced by the utility's interconnection standards and requirements. The DG Coalition questioned why such insurance is not required for back-up generation; MidAmerican responded that it is because such generation has a breakaway switch. In other words, it appears if backup (or other customer-owned) generation is properly installed, there is no extraordinary risk to the utility's system. The interconnection requirements should insure proper installation. Also, as noted earlier, neither IPL nor MidAmerican include insurance provisions in their standard AEP contract terms.

The Board invites additional comments on the liability insurance issue, but for now the Preliminary Model Procedures (Appendix A) will provide that utilities may

² Thomas J. Starrs and Robert K. Harmon, "Allocating Risks: An Analysis of Insurance Requirements for Small-Scale PV Systems," presented at the Annual Conference of the American Solar Energy Society, June 2000, Madison, WI, p. 6.

advise, but not require, that interconnecting customers obtain liability coverage. The Board has not been convinced that interconnecting customers pose any additional risk to the utility, assuming proper interconnection and operation according to the utility's technical standards and requirements. If there is no additional risk, there is no reason to impose this additional cost on interconnecting customers.

The Board would also be interested in any information regarding the costs of such liability insurance and whether such insurance is generally purchased by customer-owned facilities for their own protection or as part of their lender's requirements. If any inquiry participants have such information, it would advance discussion of the issue if the information were shared in this docket.

F. MISCELLANEOUS

Several inquiry questions were designed to draw out other suggestions and issues regarding current best practices for interconnection. Several participants proposed changes to the NARUC Document or offered other suggestions.

1. Uniformity of Standards

The DG Coalition urges the Board to adopt uniform statewide forms, contracts, technical requirements, and charges to eliminate what it describes as a patchwork of standards among utilities. MidAmerican and IAEC question the need for such uniformity and IAEC points out that a customer of one utility is not likely to be concerned about another utility's interconnection requirements.

The Board questions the value of total statewide uniformity because there will likely be differences among utilities in terms of average application and review costs, as well as potential differences in specific technical requirements and engineering

practice. The Board's approach is to adopt a uniform set of rule requirements regarding interconnection procedures that includes minimum technical standards, but allows for reasonable variation, subject to Board approval. This promotes general uniformity but allows for necessary variation based on such things as engineering requirements.

2. Tiered Requirements

The DG Coalition believes the current interconnection process is too time-consuming, complex, and expensive, particularly for small facilities. The DG Coalition advocates a tiered approach with forms, requirements, and standards appropriately differentiated based on the size of the interconnecting facility and complexity of the interconnection. No participant specifically objects to this approach, which appears reasonable. MidAmerican notes that it bases its interconnection procedures and requirements on FERC rules, which differentiates small and large facilities.

The Preliminary Model Procedures (Appendix A) provides for simplified technical and procedural requirements to reduce barriers to small facility interconnection. The Preliminary Model Procedures (Appendix A) also provides timelines for utility response to a request, assuming the interconnecting customer provides complete information with its application.

3. Model Codes

Various participants propose several models as the starting point for developing Iowa's uniform interconnection standards and requirements. The DG Coalition views the NARUC Document as outdated and suggests models developed

by policy groups, New Jersey, or Indiana. MidAmerican favors as few changes as possible to the FERC procedures, which it has adopted. IPL favors its own procedures, which it has used since 2002.

As a point for continuing discussions, the Board puts forth its Preliminary Model Procedures (Appendix A). The model borrows heavily from the Indiana model with modifications to reflect, among other things, the Board's preliminary conclusions on various issues contained in this order. The model uses a three-tier approach. Participants are invited to comment on the various provisions of the Preliminary Model Procedures (Appendix A).

4. Exports

MidAmerican recommends that any interconnection requirements apply only to facilities that export power onto the utility's system on a regular basis (in other words, back-up generators would be excluded from the requirements). Consumer Advocate agrees and no one specifically disagreed with MidAmerican's premise. The Preliminary Model Procedures (Appendix A) embodies the suggestion by applying the interconnection requirements only to parallel interconnections that allow energy flows in either direction.

5. Contract Assignment

MidAmerican argues that the utility should have the same right as the interconnection customer to assign contracts. Consumer Advocate concurs, with the added condition that a utility's assignee should be obligated to honor all contract terms and be subject to the same laws and regulatory authority as the utility. The Board will adopt the suggestion for reciprocal contract assignment rights (with

Consumer Advocate's condition) and include it in the Preliminary Model Procedures (Appendix A).

6. Capacity Size Limits

Ag Processing asks the Board to clarify whether requirements developed through this proceeding (and any subsequent rule making or other proceeding) apply only to facilities of a certain size. Currently, the Board's requirements apply to all AEP and QF facilities that interconnect with the utility's distribution system, regardless of facility size (FERC has jurisdiction over transmission-level interconnections, not the Board). The Board intends to continue this policy.

7. Application to New or Existing Agreements

Ag Processing also asks for clarification regarding application of any new interconnection requirements—whether they apply only to new or to both new and existing interconnections. The Board believes it is reasonable to apply any new interconnection requirements only to new agreements, with no retroactive application unless an existing agreement specifically provides for changes according to changes in the Board's rules or the utility's tariff.

III. ADDITIONAL INFORMATION

The Board's preliminary conclusions regarding interconnection requirements and procedures are contained in the Preliminary Model Procedures (Appendix A). It is important to emphasize that the Preliminary Model Procedures reflect the Board's preliminary conclusions only; final decisions on these issues have not been made and further comment is sought. The Board invites comments from current participants, or any other interested persons, on any aspect of the Preliminary Model

Procedures, including what participants like and what they do not like, and why. In particular, the Board invites comments on the language regarding liability and indemnification and the DG Coalition's suggestion that the Board's rules should provide for pre-certification of equipment that meets IEEE Standard 1547 and UL Standard 1741. For example, how would pre-certifications be verified, and are any nationally recognized testing and certification laboratories currently certifying generating facilities with compliance for either standard? Also, are there any examples of generating facilities and equipment that have been certified for compliance with either standard, and what laboratories certified them?

Additional comments in this proceeding must be filed on or before June 15, 2007. Reply comments may be filed on or before July 16, 2007. Participants and others should refer to page 4 of the Board's order initiating inquiry issued July 3, 2007, for directions for filing comments.

IV. CONCLUSIONS

PURPA Standard 15 has three parts. The first requires that the Board consider broadening its interconnection requirements to include all forms of customer-owned on-site generation, not just AEPs or QFs. While the Board believes it has the authority to expand the interconnection of distributed generation by rate-regulated utilities to include non-QFs, the Board will not utilize the jurisdiction at this time. The Board will continue to examine this issue but does not want to act in haste and encourage types of distributed generation that do not further the overall policy purposes of PURPA and Iowa law. Some distributed generation is fossil fuel based and encouragement of such generation appears to be contrary to the energy policies

specified in Iowa Code §§ 473.3 and 476.41 (conservation and management of fossil fuels and encouragement of renewable resources). The Board, therefore, declines to adopt the first portion of Standard 15 at this time. In addition, as discussed earlier, the Board will not apply the interconnection practices and procedures to utilities other than rate-regulated utilities at this time.

The second aspect of PURPA Standard 15 is to consider adoption of IEEE Standard 1547. The Board adopted this standard in a prior rule making (Docket No. RMU-04-6) and, therefore, from its prior action has fulfilled its obligations for consideration of the second aspect of the standard.

The third aspect of PURPA Standard 15 requires the Board to consider revising its current interconnection rules to reflect current best practices for interconnection agreements and procedures, including the NARUC Document. While the Board's examination of best practices will continue, the Board declines to adopt this portion of the standard. The NARUC Document is somewhat dated and may no longer reflect the best practices. The Board believes these are better reflected in the Preliminary Model Procedures (Appendix A) the Board proposes today.

By declining to adopt the third aspect of the standard, the Board is not closing its inquiry regarding best practices (or extending interconnection requirements to non-QF distributed generation). Additional comments on the Preliminary Model Procedures (Appendix A) are being solicited and the Board may make future changes to its policies in other dockets. A topic such as best practices generates an ever-evolving and on-going discussion; the best practices today may be supplanted tomorrow. All the Board is saying by declining to adopt the first and third portions of

PURPA Standard 15 is that it is not appropriate to adopt the standards at this time because the Board's inquiry is ongoing. By addressing all three aspects of PURPA Standard 15 in this order, the Board has fulfilled all of its requirements to consider the three aspects or parts of PURPA Standard 15.

V. ORDERING CLAUSES

IT IS THEREFORE ORDERED:

1. The Board's "Preliminary Model Interconnection Procedures for Rate-Regulated Utilities" is attached as Appendix A and hereby issued for public comment.
2. Comments may be filed on or before June 15, 2007, in accordance with the filing procedures set forth in the Board's July 3, 2006, order in this docket. Reply comments may be filed on or before July 16, 2007. Current participants and others are invited to comment on any aspect of Appendix A or this order, but are asked, if possible, to also address specific questions contained in this order.

UTILITIES BOARD

/s/ John R. Norris

/s/ Curtis W. Stamp

ATTEST:

/s/ Judi K. Cooper
Executive Secretary

Dated at Des Moines, Iowa, this 25th day of April, 2007.

APPENDIX A

Preliminary Model Interconnection Procedures for Rate-Regulated Utilities

Section 1 – Definitions

"AEP facility" means any of the following: (1) an electric production facility which derives 75 percent or more of its energy input from solar energy, wind, waste management, resource recovery, refuse-derived fuel, agricultural crops or residues, or wood burning; (2) a hydroelectric facility at a dam; (3) land, systems, buildings, or improvements that are located at the project site and are necessary or convenient to the construction, completion, or operation of the facility; or (4) transmission or distribution facilities necessary to conduct the energy produced by the facility to the purchasing utility.

"Area network" means a type of electric distribution system served by multiple transformers interconnected in an electrical network circuit that is generally used in large metropolitan areas, which are densely populated, in order to provide high reliability of service.

"Board" means the Iowa utilities board.

"Equipment package" means a group of components connecting a QF or AEP facility with an electric distribution system and includes all interface equipment including any of the following: (1) switchgear; (2) inverters; or (3) other interface devices.

"Interconnection" or *"interconnected"* means the physical, parallel connection of a QF or AEP facility with a distribution facility of an electric utility.

"Interconnection costs" means the reasonable costs of connection, switching, metering, transmission, distribution, safety provisions, and administrative costs incurred by the electric utility directly related to the installation and maintenance of the physical facilities necessary to permit interconnected operations with qualifying facilities and AEP facilities, to the extent the costs are in excess of the corresponding costs which the electric utility would have incurred if it had not engaged in interconnected operations, but instead generated an equivalent amount of electric energy itself or purchased an equivalent amount of electric energy or capacity from other sources. Interconnection costs do not include any costs included in the calculation of avoided costs.

"Nameplate capacity" means the full-load continuous rating of a generator under specified conditions as designated by the manufacturer.

"Parallel" means the designed operation of the: (1) QF or AEP facility; (2) interconnection equipment; and (3) rate-regulated electric utility's system where the instantaneous flow of electrical energy may automatically occur in either direction

across the interconnection point between the QF or AEP facility and the utility's distribution system.

"Qualifying facility" or *"QF,"* means a cogeneration facility or a small power production facility which is a qualifying facility under 18 CFR Part 292, Subpart B.

"Rate-regulated electric utility" or *"utility"* means an electric utility which is subject to rate regulation by the Board.

"Spot network" means a type of electric distribution system that uses two (2) or more inter-tied transformers to supply an electrical network circuit. A spot network is generally used to supply power to a single customer or a small group of customers.

"System emergency" means a condition on a utility's system which is likely to result in imminent significant disruption of service to customers or is imminently likely to endanger life or property.

Section 2 – Applicability

This rule shall apply to all rate-regulated electric utilities and to all QF and AEP facilities that apply for parallel interconnection with a rate-regulated utility's distribution system.

Section 3 – Exemptions

Upon agreement of the rate-regulated electric utility and the QF or AEP facility applicant, interconnection may be exempt from the requirements of this rule, except for the provisions of sections 4 and 11 of this rule.

Section 4 – General interconnection provisions

Notwithstanding the provisions of 199 IAC 15.2(2) and section 3 of this rule:

a. Each rate-regulated electric utility shall offer each of the following three (3) review procedures and requirements to QF and AEP facility applicants that apply for parallel interconnection with the utility's distribution system:

(1) The Level 1 review procedure described in section 6 of this rule for inverter-based facilities that have a nameplate capacity of ten (10) kilowatts or less and meet the certification requirements of section 5 of this rule.

(2) The Level 2 review procedure described in section 7 of this rule for facilities with a nameplate capacity of two and one-half (2.5) megawatts or less, that do not qualify for the Level 1 interconnection review procedure, and meet the certification requirements of section 5 of this rule.

(3) The Level 3 review procedure described in section 8 of this rule for facilities do not qualify for either the Level 1 or Level 2 interconnection review procedures.

b. Each utility shall designate a contact person or office from which an eligible customer can obtain basic application forms and information about interconnection through an informal process. Basic information provided to inquiring customers shall include electronic copies of:

(1) the utility's Board-approved tariffs described in section 11 of this rule;

(2) the utility's Board-approved tariff for standard rates for purchases under 199 IAC 15.5(3);

(3) the utility's Board-approved tariff for net metering under 199 IAC 15.11(5); and

(4) the Board's chapter 15 rules on cogeneration and small power production (199 IAC 15).

If the customer cannot receive electronic documents, the utility shall provide the information by paper copy.

c. The utility may require the applicant to include a disconnect switch as a supplement to the equipment package.

d. Application and interconnection review fees shall be set as follows:

(1) For a Level 1 interconnection review, the utility may charge a fee of up to twenty-five dollars (\$25).

However, if an application for Level 1 interconnection review is denied because the application does not meet the requirements for Level 1 interconnection review and if the applicant resubmits the application under another review procedure, the utility may impose a fee for the resubmitted application, consistent with this section.

(2) For a Level 2 interconnection review, the utility may charge fees up to fifty dollars (\$50) plus _____ dollar(s) (\$____) per kilowatt of the QF or AEP facility's nameplate capacity, plus the cost of any minor modifications to the electric distribution system or additional review, if required under subsection 7"q"(3) of this rule. Costs charged for minor modifications or additional review

shall be based on utility cost estimates and shall be subject to verification by the Board upon a complaint made in accordance with the Board's complaint procedures under 199 IAC 6 and section 12 of this rule. Costs for engineering work done as part of any additional review shall not exceed _____ dollars (\$____) per hour.

(3) For a Level 3 interconnection review, the utility may charge fees up to one hundred dollars (\$100) plus _____ dollar(s) (\$____) per kilowatt of the QF or AEP facility's nameplate capacity, as well as charges for actual time spent on any impact or facilities studies required under section 8 of this rule. Costs for engineering work done as part of any impact or facilities study shall not exceed _____ dollars (\$____) per hour. If the utility must conduct any impact or facilities studies or install facilities in order to accommodate the interconnection of the QF or AEP facility, the cost of such studies and facilities shall be the responsibility of the applicant and shall be subject to verification by the Board upon a complaint made in accordance with the Board's complaint procedures under 199 IAC 6 and section 12 of this rule.

e. The interconnection and operation of any QF or AEP facility is secondary to and shall not interfere with the ability of the utility to meet its primary responsibility of furnishing reasonably adequate service to all customers.

f. All QF and AEP facility electrical installations shall conform to the requirements of local ordinances and inspection authorities and the applicable requirements of this rule and rule 199 IAC 15.10.

Section 5 – Certification of QF and AEP facilities

a. In order to qualify for the Level 1 and Level 2 interconnection review procedures described in sections 6 and 7 of this rule, a QF or AEP facility must be certified as complying with the following standards, as applicable:

(1) IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, as amended and supplemented, which is incorporated by reference herein. IEEE 1547 can be obtained through the IEEE at 445 Hoes Lane, P.O. Box 1331, Piscataway, New Jersey 08855-1331 or www.ieee.org.

(2) Underwriters Laboratories (UL) Standard 1741 on Inverters, Converters, and Controllers for Use in Independent Power Systems (January 2001), as amended and supplemented, which is incorporated by reference herein. UL Standards can be obtained through Underwriters Laboratories at 333 Pfingsten Road, Northbrook, Illinois 60062-2096 or www.ul.com.

b. An equipment package shall be considered certified for interconnection operation if it has been tested and listed by a nationally recognized testing and certification laboratory as being in compliance with subsection 5"a"(1) or subsection 5"a"(2) of this rule, as applicable. A utility may propose additional certification procedures and requirements in its tariff, subject to Board approval.

c. If the equipment package has been tested and listed in accordance with this section as an integrated package that includes a generator or other electric source, the equipment package shall be deemed certified.

Any additional review, testing, or modification of the equipment package, beyond the certification requirements of the utility's tariff, shall be at the utility's expense.

d. If the equipment package includes only the interface components, an interconnection applicant must show that the QF or AEP facility being utilized with the equipment package is:

- (1) compatible with the equipment package; and
- (2) consistent with the testing and listing performed by the nationally recognized testing and certification laboratory.

If the QF or AEP facility being utilized is compatible with the equipment package and consistent with the testing and listing performed by the nationally recognized testing and certification laboratory, the equipment package shall be deemed certified. Any additional review, testing, or modification of the equipment package, beyond the certification requirements of the utility's tariff, shall be at the utility's expense.

Section 6 – Level 1 interconnection review

a. Each rate-regulated electric utility shall adopt a Level 1 interconnection review procedure. The utility shall use the Level 1 review procedure for an application to interconnect a QF or AEP facility that:

- (1) is inverter-based;
- (2) has a nameplate capacity of ten (10) kilowatts or less; and
- (3) is certified in accordance with section 5 of this rule.

b. For a QF or AEP facility described in subsection "a," the utility shall approve interconnection under the Level 1 review if all of the applicable requirements in subsections "c" through "h" are met. A utility may propose additional requirements in its tariff of Level 1 interconnection review procedures, subject to Board approval.

c. If a QF or AEP facility is to be connected to a radial distribution circuit, the aggregate generation nameplate capacity connected to the circuit, including the proposed nameplate capacity, shall not exceed five percent (5%) of the circuit annual peak load as most recently measured at the substation; the aggregate generation nameplate capacity connected to a line section, including the proposed nameplate capacity, shall not exceed ten percent (10%) of the line section annual peak load as most recently measured or estimated based on the most recently measured circuit load at the substation.

d. The aggregate generation nameplate capacity on the distribution circuit to which the QF or AEP facility will interconnect, including its nameplate capacity, shall not contribute more than ten percent (10%) to the circuit's maximum fault current at the point on which the primary level that is nearest the proposed point of common coupling.

e. If a QF or AEP facility is to be connected to a single-phase shared secondary, the aggregate generation nameplate capacity connected to the shared secondary, including the proposed nameplate capacity, shall not exceed the lesser of twenty (20) kVA or the nameplate rating of the service transformer.

f. If a single-phase QF or AEP facility is to be interconnected on a center tap neutral of a two-hundred forty (240) volt service, its addition shall not create an imbalance between the two (2) sides of the two-hundred forty (240) volt service more than twenty percent (20%) of the nameplate rating of the service transformer.

g. The QF or AEP facility point of common coupling shall not be on:
(1) a transmission line;
(2) a spot network; or
(3) an area network.

h. The QF or AEP facility shall not violate any applicable provisions of IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, as identified by the utility.

i. The utility shall notify the applicant within fourteen (14) days after receiving an application for Level 1 interconnection review as to whether the application is complete. If the application is incomplete, the notification shall include a list detailing the information needed to complete the application.

j. Within twenty-one (21) days after the utility notifies the applicant that the application is complete, the utility shall notify the applicant that the QF or AEP facility either:

(1) meets all of the criteria in subsections "c" through "h" that apply to the facility and the interconnection will be finally approved upon completion of the process set forth in subsections "k" through "n"; or

(2) has failed to meet one (1) or more of the applicable criteria in subsections "c" through "h," and the interconnection application is denied.

k. If approved, the utility shall, within fourteen (14) days after sending the notice of approval under subsection "j"(1), do the following:

(1) Notify the applicant if the utility will require inspection of the QF or AEP facility for compliance with this rule before starting operation of the facility.

(2) Execute and send to the applicant the Level 1 interconnection agreement contained in the utility's tariff.

l. An applicant that receives an interconnection agreement under subsection "k" shall do the following:

(1) Execute the agreement.

(2) Indicate the anticipated start date for operation of the QF or AEP facility.

(3) Return the agreement to the utility at least fourteen (14) days before starting operation of the QF or AEP facility.

m. If the utility requires an inspection of the QF or AEP facility, the applicant shall not begin operating the facility until completion of the inspection.

n. Upon receipt of the executed interconnection agreement and satisfactory completion of any required inspection, the utility shall approve the interconnection, conditioned on approval by the electric code officials with jurisdiction over the interconnection.

o. If an application for Level 1 interconnection review is denied because it does not meet one (1) or more of the applicable requirements of this section, an applicant may resubmit the application under Level 2 or Level 3 interconnection review procedure as appropriate.

Section 7 – Level 2 interconnection review

a. Each rate-regulated electric utility shall adopt a Level 2 interconnection review procedure. The utility shall use the Level 2 review procedure for an application to interconnect a QF or AEP facility that:

(1) has a nameplate capacity of two and one-half (2.5) megawatts or less;

(2) does not meet the requirements for Level 1 interconnection; and
(3) is certified in accordance with section 5 of this rule.

b. For a QF or AEP facility described in subsection "a," the utility shall approve interconnection under the Level 2 review if all of the applicable requirements in subsections "c" through "o" are met. A utility may propose additional requirements in its tariff of Level 2 interconnection review procedures, subject to Board approval.

c. If a QF or AEP facility is to be connected to a radial distribution circuit, the aggregate generation nameplate capacity connected to the circuit, including the proposed nameplate capacity, shall not exceed fifteen percent (15%) of the line section annual peak load as most recently measured or estimated based on the most recently measured circuit load at the substation.

d. The aggregate generation nameplate capacity on the distribution circuit to which the QF or AEP facility will interconnect, including its nameplate capacity, shall not contribute more than ten percent (10%) to the circuit's maximum fault current at the point on which the primary level that is nearest the proposed point of common coupling.

e. If a QF or AEP facility is to be connected to a single-phase shared secondary, the aggregate generation capacity connected to the shared secondary, including the proposed nameplate capacity, shall not exceed the lesser of twenty (20) kVA or the nameplate rating of the service transformer.

f. If a single-phase QF or AEP facility is to be interconnected on a center tap neutral of a two-hundred forty (240) volt service, its addition shall not create an imbalance between the two (2) sides of the two-hundred forty (240) volt service more than twenty percent (20%) of the nameplate rating of the service transformer.

g. The aggregate generation capacity on the distribution circuit to which the QF or AEP facility will interconnect, including its nameplate capacity, shall not cause any distribution protective equipment or customer equipment on the distribution system to exceed ninety percent (90%) of the short circuit interrupting capability of the equipment. In addition, a QF or AEP facility shall not be connected to a circuit that already exceeds ninety percent (90%) of the short circuit interrupting capability.

h. If there are known or posted transient stability limits to generating units located in the general electrical vicinity of the proposed point of common coupling, for example, three (3) or four (4) transmission voltage level busses, the aggregate generation capacity, including the nameplate capacity of the proposed facility, connected to the distribution low voltage side of the substation transformer feeding the

distribution circuit containing the point of common coupling shall not exceed ten (10) megawatts.

i. If a QF or AEP facility is to be connected to three-phase, three (3) wire primary utility distribution lines, a three-phase or single-phase generator shall be connected phase to phase.

j. If a QF or AEP facility is to be connected to three-phase, four (4) wire primary utility distribution lines, the generator shall appear to the primary utility distribution line as an effectively grounded source.

k. The QF or AEP facility point of common coupling shall not be on a transmission line.

l. If a QF or AEP facility is to be connected to the load side of spot network protectors, the proposed facility shall utilize an inverter-based equipment package and together with the aggregated other inverter-based generation, not exceed the smaller of five percent (5%) of a spot network's maximum load or fifty (50) kilowatts.

m. If a QF or AEP facility is to be connected to any network, the proposed facility must utilize a protective scheme that will ensure that its current flow will not affect the network protective devices including reverse power relays or a comparable function. Synchronous QF and AEP facilities shall not be interconnected to a secondary network.

n. If a QF or AEP facility that is an induction generator or utilizes inverter-based protective functions, both of which include reverse power relays functions, the nameplate capacity of the proposed facility, in aggregate with other generation interconnected on the load side of the network protective devices, will not exceed the lesser of ten percent (10%) of the minimum load on the network or fifty (50) kilowatts.

o. The QF or AEP facility shall not violate any applicable provisions of IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, as identified by the utility.

p. The utility shall notify the applicant within fourteen (14) days after receiving an application for Level 2 interconnection review as to whether the application is complete. If the application is incomplete, the notification shall include a list detailing all of the information needed to complete the application.

q. Within twenty-one (21) days after the utility notifies the applicant that the application is complete, the utility shall perform an initial review to determine if the applicable requirements of subsections "c" through "o" are met and notify the applicant

of the results. During the initial review the utility may, at its own expense, conduct any studies or tests it deems necessary to evaluate the proposed interconnection. The initial review shall result in one (1) of the following determinations:

(1) The QF or AEP facility meets the applicable requirements in subsections "c" through "o." In this case, the utility shall: (a) notify the applicant that the interconnection will be finally approved upon completion of the process set forth in subsections "r" through "t"; (b) within fourteen (14) days after this notice, notify the applicant if the utility will require inspection of the QF or AEP facility for compliance with this rule before starting operation of the facility; and (c) within fourteen (14) days after this notice, provide the applicant an executable copy of the Level 2 interconnection agreement contained in the utility's tariff.

(2) The QF or AEP facility has failed to meet one (1) or more of the applicable requirements in subsections "c" through "o"; however, the utility has determined that the QF or AEP facility can be interconnected consistent with safety, reliability, and power quality. In this case, the utility shall: (a) notify the applicant that the interconnection will be finally approved upon completion of the process set forth in subsections "r" through "t"; (b) within fourteen (14) days after this notice, notify the applicant if the utility will require inspection of the QF or AEP facility for compliance with this rule before starting operation of the facility; and (c) within fourteen (14) days after this notice, provide the applicant an executable copy of the Level 2 interconnection agreement contained in the utility's tariff.

(3) The QF or AEP facility has failed to meet one (1) or more of the applicable requirements in subsections "c" through "o"; however, the initial review indicates that additional review may enable the utility to determine that the QF or AEP facility can be interconnected consistent with safety, reliability, and power quality. In such a case, the utility shall: (a) offer to perform additional review to determine whether minor modifications to the electrical distribution system would enable the interconnection to be made consistent with safety, reliability, and power quality; (b) provide to the applicant a nonbinding, good faith estimate of the costs of the additional review or the minor modifications, or both; and (c) undertake the additional review or modifications in accordance with subsection "u."

(4) The QF or AEP facility has failed to meet one (1) or more of the applicable requirements of subsections "c" through "o," and the initial review indicates that additional review would not enable the utility to determine that the QF or AEP facility can be interconnected consistent with safety, reliability, and power quality. In such a case, the utility shall: (a) notify the applicant that the interconnection application has been denied; and (b) provide an explanation of the reason or reasons for the denial, including a list of additional information or

modifications, or both, to the QF and AEP's facility that would be required in order to obtain an approval under Level 2 interconnection procedures.

r. An applicant that receives an interconnection agreement under subsection "q"(1) or "q"(2) shall do the following:

- (1) Execute the agreement.
- (2) Indicate the anticipated start date for operation of the QF or AEP facility.
- (3) Return the agreement to the utility at least fourteen (14) days before starting operation of the QF or AEP facility.

s. The utility may:

- (1) require an inspection of a QF or AEP facility for compliance with this section before operation; and
- (2) require and arrange for witness of commissioning tests as set forth in IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems.

The utility shall schedule any inspections or tests under this section promptly and within a reasonable time after submittal of the application. The applicant shall not begin operating the QF or AEP facility until after the inspection and testing is completed.

t. For an applicant that receives a Level 2 interconnection agreement under subsection "q"(1) or "q"(2), approval of interconnected operation of the QF or AEP facility shall be conditioned on all of the following:

- (1) The interconnection has been approved by the electrical code official with jurisdiction over the interconnection.
- (2) Any utility inspection or witnessing of commissioning tests arranged under subsection (s) are successfully completed.
- (3) The planned start date provided by the applicant under subsection "r"(2) has passed.

u. For an applicant that pays for additional review under subsection "q"(3), within fourteen (14) days from the receipt of payment, the utility shall perform any additional review and notify the applicant of the results. If the additional review determines that the QF or AEP facility can be interconnected without adversely affecting safety, reliability, and power quality upon the completion of utility system modifications, the utility shall provide a cost estimate of the modifications with the results. Within thirty (30) days after receipt of the cost estimate, the applicant will either:

- (1) send payment to the utility for the estimated cost; or
- (2) notify the utility in writing that it does not wish to proceed with the project.

Upon receipt of payment, the utility shall proceed to schedule and complete the required modifications or new construction. Within seven (7) days after the completion of the modifications or new construction, the utility shall provide the applicant with an executable copy of the Level 2 interconnection agreement contained in the utility's tariff, and notification that the interconnection will finally be approved upon completion of the process set forth in subsections "r" through "t."

v. If an application for Level 2 interconnection review is denied because it does not meet one (1) or more of the applicable requirements in this section, an applicant may resubmit the application under the Level 3 interconnection review procedure as appropriate.

Section 8 – Level 3 interconnection review

a. Each rate-regulated electric utility shall adopt a Level 3 interconnection review procedure. The utility shall use the Level 3 review procedure for an application to interconnect a QF or AEP facility that:

- (1) is connected to its distribution system; and
- (2) does not meet the requirements for Level 1 or Level 2 interconnection.

b. For a QF or AEP facility described in subsection "a," the utility shall approve interconnection under the Level 3 review if all of the applicable requirements in subsections "c" through "g" are met. A utility may propose additional requirements in its tariff of Level 3 interconnection review procedures, subject to Board approval.

c. The utility shall do the following:

- (1) Conduct an initial review of the application.
- (2) Offer the applicant the opportunity to meet with utility staff to discuss the application.

d. The utility shall provide an impact study agreement to the applicant, which shall include a good faith estimate of the cost for an impact study to be performed by the utility.

e. If the proposed interconnection may affect electric transmission or delivery systems other than those controlled by the utility, operators of these systems may require additional studies to determine the impact of the interconnection on these systems. The utility shall coordinate the studies of other operators, but shall not be responsible for their timing. The applicant shall be responsible for the costs of any such

additional studies required by other affected system operators. The studies shall be conducted only after the applicant has provided written authorization.

f. After the applicant has executed the impact study agreement and has paid the utility the amount of the good faith estimate required under subsection "d," the utility shall conduct the impact study and notify the applicant of the results as follows:

(1) If the impact study indicates that only insubstantial modifications to the utility's electric distribution system are necessary to accommodate the proposed interconnection, the utility shall send the applicant an interconnection agreement that details the following: (a) the scope of the necessary modifications; and (b) an estimate of their cost.

(2) If the impact study indicates that substantial modifications to the utility's electric distribution system are necessary to accommodate the proposed interconnection, the utility shall do the following: (a) provide a good faith estimate of the cost of the modifications; and (b) offer to conduct a facilities study at the applicant's expense, which will identify the types and cost of equipment needed to safely interconnect the applicant's QF or AEP facility.

g. If the applicant requests a facilities study under subsection "f"(2), the utility shall provide a facilities study agreement. The facilities study agreement shall describe the work to be undertaken in the facilities study and shall include a good faith estimate of the cost to the applicant for completion of the study. Upon execution by the applicant of the facilities study agreement, the utility shall conduct a facilities study, which shall identify the following:

(1) The facilities necessary to safely interconnect the QF or AEP facility with the utility's electric distribution system.

(2) The cost of those facilities.

(3) The time required to build and install those facilities.

h. Upon completion of the facilities study, the utility shall provide the applicant with the results of the study and an executable copy of the Level 3 interconnection agreement contained in the utility's tariff. The agreement shall list the following:

(1) The conditions and facilities necessary to safely interconnect the QF or AEP facility with the utility's electric distribution system.

(2) The cost of those facilities.

(3) The time required to build and install those facilities.

i. If the applicant wishes to interconnect, the applicant shall do the following:

(1) Execute the Level 3 interconnection agreement.

(2) Provide a deposit of the cost of the facilities identified in the facilities study.

- (3) Complete installation of the QF or AEP facility.
- (4) Agree to pay the utility the amount required for the facilities needed to interconnect as identified in the facilities study.

j. Within twenty-one (21) days after notice from the applicant that the QF or AEP facility has been installed; the utility shall do the following:

- (1) Inspect the QF or AEP facility.
- (2) Arrange to witness any commissioning tests required under IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems.

The utility and the applicant shall select a date by mutual agreement for the utility to witness commissioning tests.

k. Provided the QF or AEP facility passes any required commissioning tests satisfactorily, the utility shall notify the applicant in writing, within seven (7) days after the tests, of one (1) of the following:

- (1) The interconnection is approved and the QF or AEP facility may begin operation.
- (2) The facilities study identified necessary construction that has not been completed, the date upon which the construction will be completed, and the date when the QF or AEP facility may begin operation.

l. If the commissioning tests are not satisfactory, the QF and AEP shall repair or replace the unsatisfactory equipment and reschedule a commissioning test under subsection "j."

Section 9 – Requirements for ongoing operation of QF and AEP facilities

a. The utility may perform reasonable on-site inspections to verify the proper installation and continuing safe operation of the QF or AEP facility and interconnection facilities. These inspections shall be at reasonable times and upon reasonable advance notice to the customer. The cost of the inspection or inspections shall be at the utility's expense; however, the utility shall not be responsible for any other cost the customer may incur as a result of the inspection or inspections.

b. The customer shall install, operate, and maintain the QF or AEP facility in accordance with the manufacturer's suggested practices for safe, efficient, and reliable operation in parallel to the utility's system.

c. The utility may isolate any QF or AEP facility if the utility believes continued interconnection with the QF or AEP facility creates or contributes to a system

emergency. System emergencies causing discontinuance of interconnection shall be subject to verification by the Board upon a complaint made in accordance with the Board's complaint procedures under 199 IAC 6 and section 12 of this rule.

d. If the utility finds that the QF or AEP facility is not in compliance with the requirements of this rule and the noncompliance adversely affects the safety, reliability, or power quality of the electric distribution system, the utility may require the customer to disconnect their QF or AEP facility until compliance is achieved.

Section 10 – Liability and insurance

a. Liability. The utility and the QF or AEP facility shall each indemnify, hold harmless, and defend the other party, its officers, directors, employees, and agents from and against any and all claims, suits, liabilities, damages, costs, and expenses resulting from the installation, operation, modification, maintenance, or removal of the facility, to the extent caused wholly or in part by the negligence or intentional wrongdoing of the indemnifying party. The liability of each party shall be limited to direct actual damages and all other damages at law or in equity shall be waived. The liability of the utility shall be further limited according to Iowa law and according to the liability standards specified in the utility's tariff to the extent the tariff standards are consistent with Iowa law.

b. Insurance. The utility may advise, but not require, the interconnecting facility to obtain liability insurance against risks for which there is a reasonable likelihood of occurrence and sufficient to meet its liability and indemnification responsibilities.

Section 11 – Tariff requirements

a. Each rate-regulated electric utility shall file tariffs for its:

(1) Certification procedures and requirements described in section 5 of this rule.

(2) Level 1 interconnection review procedures and requirements described in section 6 of this rule, including standard application forms and interconnection agreements.

(3) Level 2 interconnection review procedures and requirements described in section 7 of this rule, including standard application forms and interconnection agreements.

(4) Level 3 interconnection review procedures and requirements described in section 7 of this rule, including standard application forms and interconnection agreements.

The initial tariffs and any subsequent revisions shall be subject to Board approval.

b. Notwithstanding the provisions of 199 IAC 15.2(2) and section 3 of this rule, the utility shall offer its Board-approved standard application forms and standard interconnection agreements to all customers seeking interconnection of their QFs and AEP facilities, according to the facility's level of review.

Section 12 – Customer complaints

In the event a rate-regulated electric utility and an applicant are unable to agree on any matter relating to the QF or AEP facility's interconnection, the applicant may seek resolution by filing a complaint in accordance with the Board's complaint procedures under 199 IAC 6.