STATE OF MAINE
PUBLIC UTILITIES COMMISSION

Docket No. 2009-219

January 4, 2010

PUBLIC UTILITIES COMMISSION
Small Generator Interconnection Standards
Chapter 324

ORDER ADOPTING
RULE AND STATEMENT OF
FACTUAL AND POLICY
BASIS

REISHUS, Chairman; VAFIADES and CASHMAN, Commissioners

I. SUMMARY

In this Order, we adopt a final rule, Chapter 324 Small Generator Interconnection Procedures.

II. BACKGROUND

During the 2008 session, the Legislature enacted Resolve, To Encourage Renewable Energy and Energy Conservation in Maine, Resolves 2007, ch. 183. Section 2 of the Resolve directed the Commission to conduct a review of the advisability of statewide interconnection standards for small renewable generation facilities. The Resolve stated in relevant part:

> That the Public Utilities Commission shall review and make a determination regarding the establishment of statewide standards for the interconnection of small renewable energy facilities to the energy grid. For the purposes of this section, "small" means an installed capacity of no more than 5 megawatts. In making its determination, the commission shall consider relevant federal laws and rules as well as interconnection standards that have been developed by states and other appropriate entities. If the commission finds that statewide interconnection standards for small renewable energy facilities are advisable, the commission shall proceed to develop such standards. In any development of interconnection standards pursuant to this section, the commission may establish different standards for different tiers of facilities based on generating capacity and may develop any necessary interconnection agreements and related forms, as appropriate.

The Resolve specified that the Commission submit a report by January 15, 2009 containing its findings and recommendations regarding the advisability of creating statewide small generator interconnection standards.

As part of the required review, the Commission initiated an Inquiry[1] to obtain information and viewpoints from interested persons on small generator interconnection standards. In the Notice of Inquiry, the Commission asked transmission and distribution (T&D) utilities to provide their small generator interconnections standards and rules, and solicited input on a variety of issues regarding uniform interconnection standards. On April 23, 2008, the Commission released a draft report on statewide small generator interconnection standards for comment by interested persons.[2]

The Commission concluded in its January 15, 2009 final report that statewide interconnection procedures for Maine's utilities should be created. The report stated that standardized rules would increase the efficiency of the interconnection process, encourage the increased use of renewable energy and other distributed generation resources like micro combined heat and power systems, and may foster an easier business environment for the companies that sell and install small generation systems. The Commission further concluded that, rather than limit the rule to generation of no more than 5MW, it would avoid regulatory gaps if new rules were applied to all generation that did not fall within FERC's jurisdiction. The Commission currently has the authority to implement statewide small generator interconnection standards and procedures through the adoption of rules. 35-A M.R.S.A. § 111. Accordingly, the Commission initiated the rulemaking process and issued its proposed rule and associated forms on July 21, 2009. The rule adopted through this order has been modified in response to the comments received.

III. RULEMAKING PROCESS

On July 21, 2009 the Commission issued a Notice of Rulemaking for Chapter 324 Small Generator Interconnection Procedures. Consistent with rulemaking procedures, on August 27, 2009 the Commission held a public hearing to allow interested persons to comment on the Rule, and provided interested persons with an opportunity to submit written comments.

---

[1] *Inquiry into Interconnection Standards for Small Renewable Energy Facilities,* Docket No. 2008-186 (April 23, 2008). The following interested persons participated in the Commission's small generator interconnection standards Inquiry: Central Maine Power Company (CMP), Bangor Hydro-Electric Company (BHE), Maine Public Service Company (MPS), Van Buren Light and Power District (VBLPD), Kennebunk Light and Power District (KLPD), American Wind Power Association (AWEA), Independent energy Producers of Maine (IEPM), Maine Rural Partners (MRP), the Interstate Renewable Energy Council (IREC), the E Cubed Company, Suzanne Sayer, and John Carpenter.

[2] All comments filed in the Inquiry are posted on the Commission's virtual case file on its webpage, www.maine.gov/mpuc, through reference to Docket No. 2008-186.

At the hearing CMP, BHE, and John Carpenter provided comments on his own behalf. Written comments were received from CMP, BHE, MPS, John Carpenter, and from IREC. This Final Rule has been modified in some sections in response to the comments received by the Commission.

In a concurrent proceeding, interested persons were invited to comment on standardized forms and agreements to be used with the interconnection procedures contained in Chapter 324. These forms and agreements will be adopted by the Commission in a separate order.

III. SMALL GENERATOR INTERCONNECTION OVERVIEW

Over the past few years, several states and the federal government have worked to create jurisdiction-wide standards for small generator interconnections. This follows an expansion in state net metering rules[3] that began in the mid-1990s, and an increased interest in distributed generation systems among consumers. The increased interest in distributed generation is due to a variety of factors. These include potential benefits of reducing stress on aging grid infrastructure, reduced greenhouse gas emissions, and increasing energy security and efficiency.

In considering uniform interconnection standards, a variety of issues need to be considered. There are technical issues that relate to safety, power quality, and impacts to the transmission and distribution system. National standards have been developed that address these issues for many systems. These standards are Institute of Electrical and Electronic Engineers (IEEE) 1547 and Underwriters Laboratories (UL) 1741. The intent of these standards is to ensure that certified systems are safe for interconnection.

There are also legal and procedural issues that relate largely to the problem of disparate rules from state to state or even utility to utility. The less disparate the procedures and rules are from one region to the next, the easier it is for system sellers and installers to develop standard practices. Standard practices serve to increase efficiency and reduce the costs of systems to the purchasers.

In the past few years, several entities have worked to create model procedures and agreements for small generator interconnection. Three major model rules are the FERC's Small Generator Interconnection Procedure (SGIP), IREC's model standards, and Mid-Atlantic Demand Resources Institute's (MADRI) model standards. The FERC's SGIP has been the most widely used.[4] The IREC model is in large part based on the

---

[3] Net metering is a billing and metering practice in which a customer is billed based on the difference between the kilowatt-hours the customers consumes and the kilowatt-hours produced by the customer's generating facility.

[4] See IREC, *Connecting to the Grid*, at p. 7-8 (2007), available at http://www.irecusa.org/fileadmin/user_upload/ConnectDocs/IC_Guide.pdf (last visited July 16, 2009).

FERC model, but a few changes were made to improve timeframes, and to lower remaining barriers to small generation.[5] MADRI is used by fewer states than the other models. It was originally developed for the Mid-Atlantic States, and has at least informed Pennsylvania's small generator interconnection process, but few others. Several states have been influenced by both the IREC and the SGIP rules in drafting their own interconnection rules.

Also over the past few years, two organizations, the IEEE and UL, developed standards specifically to ensure that the distributed generation systems they certify are safe for interconnection. Those standards are IEEE 1547, and UL 1741.[6] Each sets minimum safety requirements for equipment that will be used to interconnect to the grid including inverters, converters, controllers, and other equipment. All of the major model interconnection procedures recognize that systems complying with these standards require less robust review because they have already been extensively tested. However, not all recognize that certified inverter based systems under a certain size do not require an external disconnect switch to prevent accidental energizing of dead lines.

FERC has jurisdiction over generator interconnection on transmission lines, but, except for limited situations, FERC does not have jurisdiction over distribution systems.[7] The exception is that FERC may claim jurisdiction over a distribution line when a "non-qualifying facility" generator interconnects to a distribution line covered by a public utility's Open Access Transmission Tariff to make wholesale sales of electricity.[8] Thus, the Commission has jurisdiction to adopt uniform interconnection standards for small generator interconnection to the utilities' distribution system, which is the likely point of interconnection for the majority of small generation units.

---

[5] See *Id.* at 32.

[6] See UL 1741, Available at http://www.comm-2000.com/productdetails.aspx?sendingPageType=BigBrowser&CatalogID=Standards&ProductID=UL1741_1_S_19990507(ULStandards2) (last visited July 16, 2009), and see IEEE 1547-2003 (Reaff. 2008) available at https://sbwsweb.ieee.org/ecustomercme_enu/start.swe?SWECmd=GotoView&SWEView=Catalog+View+(eSales)_Standards_IEEE&mem_type=Customer&SWEHo=sbwsweb.ieee.org&SWETS=1192713657 (last visited July 16, 2009).

[7] FERC Order 2006 requires all public utilities that own, control, or operate facilities under the FERC's jurisdiction to file standard procedures, the SGIP, and a standard agreement with respect to interconnection of generating facilities up to 20 MW. FERC Order 2006, 18 CFR Part 35 at p. 4-5.

[8] *Id.*

IV. DISCUSSION OF POLICY CONSIDERATIONS

Maine's net metering rules (Chapter 313 of the Commission's Rules) significantly advance the goal of promoting smaller consumer owned forms of renewable power. The adoption of statewide standards for the interconnection of these resources will compliment the State's net metering rules, and further facilitate small renewable projects at the consumer level by making it easier and cheaper to connect their systems to the power grid. Beyond facilitation of small renewable projects, standardized rules will also work to the advantage of non-renewable forms of small generation. There appears to be no reason to distinguish between forms of small generation for purposes of standard interconnection rules.

One of the key benefits of a standardized process is that it should be easier, on several levels, for manufacturers and installers of small systems. Transaction costs are reduced to the extent that the process is the same, or nearly the same, between utilities and from state to state. Furthermore, under a standardized procedure, small generation systems can be better designed to ensure compliance with IEEE 1547 and UL1741 instead of having to customize their products to meet each different utility's requirements. This is likely to reduce the cost of the generation equipment and its installation. A standardized procedure can also serve to reduce the expense to utilities in managing the interconnection requests from its customers, especially to the extent that it reduces the time its employees need to spend on each interconnection request.

Some of the utilities in Maine, through adoption of the SGIP, have already taken a step towards a more uniform and standardized process that is familiar to many system manufacturers and installers. There remain, however, some utility specific requirements that diminish this benefit to some extent. There also remain several utilities in the State that fully rely on self-designed processes specific to interconnections in their own territory. Adoption of statewide standard will eliminate utility specific requirements and procedures. Adoption will also allow system manufacturers and installers to standardize their operations.

The inquiry that was initiated following the Legislature's Resolve led to the choice of the IREC model for the proposed rule. Two of Maine's utilities already use the SGIP. The IREC model, along with being based in part on the SGIP, represents an attempt to further reduce barriers to interconnecting small generators. This is consistent with the Legislature's direction that standardized interconnection standards and procedures for generators be examined.

The IREC Model is based on the SGIP. It maintains the technical standards, application forms and the simplified agreement for interconnection of inverter-based systems no larger than 10 kW. It also uses largely the same method as the SGIP model for any interconnections requiring utility system upgrades. There are several differences from the SGIP with general applicability, and a few which are specific to one of the four tiers used in the model procedures.

V. RESPONSE TO GENERAL COMMENTS

1. CMP

CMP comments in favor of adopting FERC's SGIP, rather than the IREC model, because it already uses the SGIP and some of its own forms and procedures to process interconnection requests from small generation. According to CMP, the SGIP combined with the existing Chapter 313 Net Energy Billing rules, and Chapter 315 Small Generator Aggregation rules provide sufficient procedures for small generator interconnections. The concern expressed is that adopting small generator interconnection rules will add confusion.

We continue to believe that new comprehensive small generator interconnection rules are necessary. In the inquiry that preceded this rulemaking it was clear that, though CMP's process was relatively straight forward and largely based on the SGIP, there were some CMP specific requirements. Other utilities in the State have processes that are even more varied, and one, MPS, initially commented in support of the development of new interconnection rules. Given the variation in interconnection procedure that exists in Maine today, providing uniform rules that are similar across all utilities in the State is likely to produce less confusion overall and not more.

CMP states that "the Commission should not focus on fostering an easier business environment for companies that sell and install small generation systems . . . the Commission's focus instead should be on ensuring the procedures result in safe reliable service. ..." We see no reason why standardized interconnection rules cannot achieve both of these goals and furthermore, interested persons have not made comments that give us reason to conclude that the rules proposed fail to ensure safe reliable service. The safety considerations are in large part achieved through adherences to IEEE and UL standards that are referred to in the rule. No party has commented that these standards fail to ensure safe reliable standards for interconnecting small generators. We have modified the final rules as noted in the next section of this Order in response to some comments regarding safety concerns that do not relate to the IEEE and UL standards.

CMP also suggests that the Commission engage in a working group process to develop different interconnection rules. While we appreciate the value stakeholder working groups can bring to the development of practical rules, we do not see value in engaging in such a process in this case. There has been no shortage of opportunity for interested persons to weigh in on the development of these rules. These opportunities included an initial inquiry pursuant to the Maine Legislature's Resolve, a request for comment on the IREC model rules provided with the draft report to the Utilities and Energy Committee, the Notice of Proposed Rulemaking, a hearing on the rule, and finally the opportunity to provide written comments to the Proposed Rule. CMP makes similar comments with respect to the forms and agreements associated with this rule that we will adopt through a separate order. We reiterate the sentiment expressed above regarding the interconnection rules themselves. There has been more than

enough opportunity for stakeholders to provide input on these forms, and they have been modified from their original format to some extent with that input in mind.

CMP raises the concern that identifying which facilities are State jurisdictional and which are federal could be difficult, and could change with changes in the use of a facility. This is due in part to the fact that the use of the facility often determines whether it is subject to State or federal jurisdiction. We recognize that in specific instances a facility could get rather far along in the interconnection process established under these rules before finding out that it is actually subject to federal law, and should instead be pursuing an interconnection request with ISO-NE. In almost all cases, the types of facilities that may face this problem will be those of larger entities or groups of customers who should have the sophistication necessary to determine which process is appropriate. While we appreciate CMP's concern for the efficiency of the process, we do not expect mistakes over whether the State or federal process applies to arise frequently enough to warrant adopting the SGIP. When they do occur, we expect that the customer will have to begin the interconnection process anew with the appropriate entity, most likely that entity will be ISO-NE.

A final concern raised by CMP in its written comments is cost shifting. In both its general comments and its comments to specific sections, CMP states that because the rule sets out fixed fees in many instances that cost shifting is likely to occur. In this case, the rules are designed with the goal of increasing the efficiency of the interconnection process, encouraging the increased use of renewable energy and other distributed generation resources, and the hope that they will foster an easier environment for installers of distributed generation systems. As we noted above, "[a] standardized procedure can also serve to reduce the expense to utilities in managing the interconnection requests from its customers, especially to the extent that it reduces the time its employees need to spend on each interconnection request."

Fixing the fees for more of the expenses provides some encouragement to utilities to develop efficient processes to review interconnection requests. Removing the obstacles for generators, especially small certified inverter based generators, also substantially lowers expenses for the utility when reviewing the interconnection request. Earlier in this Order, we noted the benefits that distributed generation can bring to this State. CMP has not provided us with any information to convince us that the benefits of greater efficiency of the process under this rule, the greater predictability of expenses, or the external benefits of distributed generation are outweighed by the risk of subsidy by other customers for some of the interconnections that will occur under these rules. If, in practice, this rule shifts an inordinate level of costs to other customers CMP or other interested persons, may ask the Commission to amend the rule.

2. <u>IREC</u>

IREC's comments were largely supportive of the Commission's adoption of rules based on its model. IREC made one suggestion regarding expanding

the non-exporting generator provisions, which IREC says may be particularly helpful in Maine. We have already departed from the IREC model in ways that expanded the interconnections that will operate under these rules. The current draft of the rule has been through several revisions and several rounds of comments from interested persons and we will not make such a change at this late stage.

3. BHE

BHE made several comments which are addressed below in the discussion of applicable sections of the rule. One comment that is not addressed there is BHE's suggestion that the SCADA[9] access requirements that BHE imposes on generators over 3 MW in size be included in the rules. We understand BHE's concern, but do not see the need to include a BHE specific requirement in the rule at this time. For the Level 3 interconnections (larger than 2 MW) the rule does not provide for the installation of SCADA or other control technologies. In large part this is due to the limitations contained in the applicable screens for Level 3 generators. If the generator's interconnection meets those screens, the need for SCADA monitoring is substantially reduced because Level 3 generators are not exporting power to the T & D system. If there are specific instances where BHE has concerns, we encourage it to request a waiver of the rule. For Level 4 interconnections, there is sufficient flexibility in the rule for the utility to require SCADA after system impact studies, or facility studies demonstrate that it is necessary for safe interconnection. The rule also provides a mechanism for requiring the customer to pay for such equipment under Level 4 applications.

4. MPS

MPS made several comments that are addressed in the discussion of the applicable sections of the rule below. MPS's general comments are addressed here.

MPS requests changes to the forms associated with this rule to incorporate Net Energy Billing provisions. While we are mindful that many of the customers interconnecting under this rule will be net billing, we will not change the forms or the rule to intertwine the two. It is likely worth the small amount of additional paperwork to keep the interconnection process separate from the net energy billing process. Given the long-term nature of many of the generator facilities, it is possible that a customer or group of customers could change their net billing arrangements several times while the nature of the generator and the interconnection remains the same.

We have fixed the page numbers for Chapter 324 in the Final Rule per MPS's comment. It was a formatting error, and may not have been incorrect in all versions of the document.

---

[9] SCADA is an acronym that stands for Supervisory Control and Data Acquisition. SCADA refers to a system that collects data from various sensors at a generating unit and sends it to a control center.

5. John S. Carpenter

Mr. Carpenter made several comments regarding the rule during the hearing. His main concerns at that time were that the proposed rules are focused on the IEEE and UL standards and may leave out safe generators that are older than the standards. We understand his concerns, but see little way to ensure the safety of interconnection without expanded study provisions for those generators. The Level 4 interconnection path is the likely one for such generators. The application fee is higher for Level 4 due to the greater review involved. There is also the possibility that even more expense could be borne by a customer if impact and system studies are required. The rule does however allow the utility to waive these studies if it is able to determine that interconnection would be safe without engaging in further study. We understand that customers with older models of generators may face a few more obstacles than newer certified generators, but we hope that the flexibility built into the rule lessens these obstacles to some extent.

Mr. Carpenter also expressed concern regarding transfers of property with generation already interconnected. Though the rule does not address this, such agreements can be assigned. If problems arise here, any disputes can be brought to the Commission under the rule.

V. DISCUSSION OF INDIVIDUAL SECTIONS

1. Scope (Section 1)

The first section of the proposed rule sets out its scope. The four review paths for customer-sited generation are also specified in this section of the rule. CMP requested clarification of whether the term “export” as used in Subsection C has a meaning other than “that the customer is physically capable of delivering electricity onto the CMP system.” The term does not have another meaning, and it is sufficiently clarified in Subsection B of § 10 that a customer “must use reverse power relays or otherwise ensure no export to the T & D Utility system.” There were no other comments to this section and therefore it is unchanged in the Final Rule.

2. Definitions (Section 2)

This section contains definitions of the terms used throughout the rule. A definition for Business Day was added to the Final Rule similar to that suggested by CMP in its comments in order to clarify the timeframes for certain steps in the interconnection process, and to ensure that each party involved in an interconnection has sufficient time to take the action required by the rule. The close of the Business Day is 5:00 p.m. rather than the 4:00 p.m. suggested by CMP, because it is a more commonly used time to define the term.

The definition for Supplier/Provider was changed in the Final Rule to Competitive Electricity Provider as suggested by CMP. This term is used in our other rules, and using it here prevents confusion. A similar change was made to the definition of Transmission and Distribution Utility based on CMP's comments. This is the same definition used for the term in other rules and it replaces the earlier language.

CMP also suggests in its written comments that the definition of Customer-Generator be modified to make clear the distinction between interconnections that fall within this rule and those that must go through the ISO-NE process. We have not made this change. The rule is clear enough to indicate which resources it applies to, and to the extent a customer that must go through the ISO-NE process but is confused, the T & D Utility should be able to point the customer in the proper direction.

CMP proposed a change to the term "Point of Common Coupling" to "Point of Interconnection." We do not make the change here. The Point of Common Coupling is often the same as the Point of Interconnection. In those instances where it is not any change to the term could lead to conflicts with the application of IEEE and UL standards. This section remains unchanged in the Final Rule.

3. Standard Forms (Section 3)

Section 3 describes what information will be required for the interconnection process and where the standard forms can be found. This section also specifies that the Commission will adopt the forms and agreements by order. Some comments were received with respect to the standard forms that were distributed with the notice of the proposed rule. These comments will be addressed in the separate order adopting the forms. Some general comments with regard to the forms have been addressed above.

4. Standards for the Certification of Generators and Interconnection Equipment (Section 4)

Section 4 specifically recognizes the certifications of IEEE 1547, and UL 1741, which determines whether the project qualifies for expedited review under the Level 1 interconnection path. CMP states that it should be allowed to inspect a customers equipment to insure that it has not been modified, and that it has been installed properly all at the customer's expense. This has been addressed in other sections of the Final Rule and in response to other comments. No changes have been made to this section in this regard, because this section of the rule does not deal with inspection and testing.

5. Certified Equipment (Section 5)

Section 5 specifically adopts the FERC Order 2006 definitions of certification and Nationally Recognized Testing Laboratory (e.g. IEEE or UL). In its comments to this section CMP states that Nationally Recognized Testing Laboratory (NRTL) is not defined in Order 2006 nor in the SGIP. We disagree. In Order 2006 there

is discussion of NRTLs found at ¶¶ 150-156, and in Attachment 4 to the SGIP at 1.0 what constitutes an NRTL is more clearly explained. We agree with CMP's comment that IEEE and UL certifications are not NRTLs even though we mistakenly described them as such in the July 21st, 2009 Notice of Rulemaking. IEEE and UL maintain the standards that an NRTL ensures compliance with in order to certify equipment. CMP's comments here do not appear to request any changes, and accordingly this section remains unchanged in the Final Rule.

6. General Technical Screening Criteria (Section 6)

Section 6 of the final rule contains the general screening criteria which will, in most cases, apply to review of each customer-sited generation project regardless of which of the four paths apply to the project. CMP comments that "in many circumstances" determining whether a generator's Point of Common Coupling will be on a transmission line will require technical studies. CMP's comments do not request any changes, and no other commenters requested changes to this section; accordingly, this section remains unchanged in the Final Rule.

7. Special Screening Criteria for Interconnection to Distribution Networks (Section 7)

Section 7 of the final rules establishes special screening criteria for interconnections to distribution networks. Distribution networks are usually found in locations like large commercial office buildings, or at university campuses. No comments were received with regard to this section and therefore this section remains unchanged in the Final Rule.

8. Level 1 Screening Criteria and Process: Inverter-Based Generators not Greater than 10 kW (Section 8)

Section 8 establishes the procedure, timing, and payment for the expedited Level 1 review path. In Subsection A, the time for the T & D Utility to provide acknowledgement of receipt of a customer's interconnection application has been extended to 5 Business Days from the 3 days proposed in the Proposed Rule. This is in response to the comments of MPS, BHE, and CMP requesting 10 Business Days to provide an acknowledgement, while at the same time being sensitive to the need to ensure prompt attention to a Customer's application. It is important to note that very little is required of a utility in its acknowledgement of receipt. The T & D Utility need only provide either an acknowledgment of receipt of a completed application or an acknowledgment of receipt with a list of the information that is needed for a complete application. Providing this to an interconnection customer should not take 10 Business Days, which amounts to two weeks or more. The Final Rule also clarifies that the time to send the acknowledgement begins running once the application is received by the T & D Utility. This is in response to CMP's comments that it was unclear in the proposed rule when these timeframes begin to run.

In Subsection C, the Final Rule is clarified by specifying that the 10 days to notify the Customer whether the screens were passed runs from the date notice of receipt of a complete application is sent, and is in response to CMP's comments that it was unclear when these timeframes begin to run.

In Subsection D the timing for sending a partially or fully executed interconnection agreement has been extended to five Business Days pursuant to the T & D Utilities' comments regarding the shorter timeframes in the proposed rule.

Subsection F relating to default approvals has been modified to reflect the other timing changes. Despite CMP's safety concerns regarding the possibility that it may be overburdened by a large volume of applications which could cause it to miss deadlines leading to default approvals for unsafe generators, it has not been removed. These rules can be waived if there is a danger posed by the customer interconnecting its equipment. The interconnection agreements and other provisions of this rule also allow the T & D Utility to disconnect a customer if there is a danger posed by its generating equipment. Furthermore, a utility may request a waiver of this rule provision if an exceptionally high number of interconnection applications prevent it from addressing applications in a timely manner. Leaving this provision in the rule provides the interconnecting customer with some assurance that unnecessary delay in its application will not occur. It also provides businesses that install these systems a clearer sense of how long it will take to get their customer's generation equipment connected.

Subsection G sets out the application fee of $50 for Level 1 interconnections. In MPS, BHE, and CMP's written comments they assert that the $20 fee in the Proposed Rule does not cover the costs of reviewing the application and putting an agreement in place. CMP proposes a fee in the range of $200-$500, but makes no attempt to show what level of fee would cover their costs, and provides no information on what those costs might be. The other two utility commenters also do not provide estimates of what applications for Level 1 interconnections will actually cost. In the Final Rule a $50 fee rather than a $20 fee applies to Level 1 interconnection applications in recognition of the concerns expressed by the utilities. We are not inclined to accept CMP's assertion that the costs will range from $200 to $500. Under the Final Rule a utility will only need to review the application to ensure it falls within the screens in this section of the rule, and the contract is already provided through the forms associated with this rule. Simplifying the process in this way should reduce the overall cost of interconnections for customers and for utilities, and without more information we will not modify the fee in the Final Rule to as great an extent as CMP requests. The $50 fee balances the goal of making the process very simple for the customer and for the utilities, with the concerns expressed by the comments in the utilities' comments.

CMP and MPS mention the expense of inspection and testing. This section of the rule does not anticipate the need for inspection and testing, though it allows these at the expense of the utility and at its discretion. The principal behind this is that Level 1 generators are those that comply with IEEE and UL standards which make

these steps much less likely to be necessary, and the systems have a low enough output to further reduce the need. The timing for giving notice of operation remains at 5 Business Days prior. We understand that it may be a challenge to schedule an inspection in five Business Days, but it is reasonably possible. The utility should manage its resources in this area with that in mind. As with the default approval provision, if CMP or other utilities find this creates a hazard or it becomes overly burdensome there are several ways to work through the problem, including but not limited to a request for waiver or an amendment of the rule.

CMP also comments that any under-recovery of its costs of reviewing these applications will result in a subsidy by other ratepayers. We are mindful of this issue, while at the same time we recognize the benefits these resources bring are not just to the owners but to other ratepayers. None of the information provided in this docket or the prior inquiry give us reason to believe that the benefits do not outweigh the costs, or even that there would be significant costs. If the costs prove to be overly burdensome, or much higher than expected, the rule can be amended in the future once information showing this becomes available.

9. Level 2 Screening Criteria and Process: Generators Not Greater than 2 MW (Section 9)

Section 9 of the Final Rule establishes the procedure, timing and payment for the Level 2 review path. In Subsection A, the time for the T & D Utility to provide acknowledgement of receipt of a customer's interconnection application has been extended to 5 Business Days from 3 days. This is in response to the comments of MPS, BHE, and CMP requesting 10 Business Days to provide an acknowledgement, while at the same time being sensitive to the need to ensure prompt attention to a Customer's application. It was also clarified that the time to send the acknowledgement begins running once the application is received by the T & D Utility. This is in response to CMP's comments that it was unclear in the Proposed Rule when these timeframes begin to run.

In Subsection C, clarification was added to specify that the 15 days to notify the Customer whether the screens were passed runs from the date notice of receipt of a complete application is sent. This is in response to CMP's comments that it was unclear in the proposed rule when these timeframes begin to run. The incorrect reference in this subsection has also been corrected in the Final Rule pursuant to CMP's comment.

In Subsection E, the time to send a partially executed Interconnection Agreement is extended to 5 Business Days from the notice that the applicable screens have been met. This is in response to the comments of MPS, BHE, and CMP requesting more time, while at the same time being sensitive to the need to ensure prompt attention to a Customer's application.

The incorrect reference in Subsection F has been corrected in the Final Rule pursuant to CMP's comment.

Subsection G allows a utility to conduct witness testing. CMP's written comments state that costs for such tests should be assessed to the customer. The rule makes this witnessing optional for the utility, and may not be required in all cases. One of the goals of this rule is to make costs more predictable for utility customers seeking to interconnect their small generators. Introducing an unbounded cost that is in the full discretion of the utility would work against such predictability Therefore; no change was made to this subsection in the Final Rule.

Subsection I sets the fee for Level 2 applications at $50 plus $1 per kW of the generator rating. CMP comments that this fee may under-recover the costs incurred and suggests that the rule provide for the customer to pay all costs incurred for the interconnection based on estimates, with 3 months allowed to reconcile to costs actually incurred. CMP provides no information to support its assertion that the current fee would lead to an under-recovery of costs. The fee is not modified in the Final Rule. Allowing a utility to recover an unbounded fee would work against the goal of providing customers and system installers with predictable costs, and would give the utility no incentive to keep those costs as low as possible.

10. Level 3 Screening Criteria and Process: Non-Exporting Generators Not Greater Than 10 MW (Section 10)

Section 10 sets the procedure, timing, and payment for the Level 3 review path. In Subsection A of the Final Rule, the time for the T & D Utility to provide acknowledgement of receipt of a customer's interconnection application has been extended to 5 Business Days from 3 days. This is in response to the comments of MPS, BHE, and CMP requesting 10 Business Days to provide an acknowledgement, while at the same time being sensitive to the need to ensure prompt attention to a Customer's application. It was also clarified that the time to send the acknowledgement begins running once received by the T & D Utility. This is in response to CMP's comments that it was unclear in the proposed rule when these timeframes begin to run.

In Subsection C, clarification was added to specify that the 17 days to notify the Customer whether the screens were passed runs from the date notice of receipt of a complete application is sent. This is in response to CMP's comments that it was unclear in the proposed rule when these timeframes begin to run.

In Subsection E, the time to send a partially executed Interconnection Agreement is extended to 5 Business Days from the notice that the applicable screens have been met. This is in response to the comments of MPS, BHE, and CMP requesting more time, while at the same time being sensitive to the need to ensure prompt attention to a Customer's application.

To the extent CMP's comments are the same for this §10 as they are in §9 our response to those comments are also the same.

11. Level 4 Screening Criteria and Process: All Generators Not Subject To FERC Jurisdiction (Section 11)

Section 11 of the rule sets the procedure, timing, and payment for the Level 4 review path. The major differences between this section and sections 8-10 is that provisions have been added to account for the more in depth reviews that will be required for interconnections that fall into Level 4.

In Subsection B, the time for the T & D Utility to provide acknowledgement of receipt of a customer's interconnection application or transfer of the customer's application to Level 4 has been extended to 5 Business Days from either receipt of the application or from the application transfer date. This is in response to the comments of MPS, BHE, and CMP requesting more time, while at the same time being sensitive to the need to ensure prompt attention to a Customer's application. This also clarifies the timeframes in response to CMP's comments that they were not clear in the proposed rule.

Subsection D of Section 11, recognizes that queuing may be required if multiple Level 4 generators seek to interconnect in the electrical vicinity of one another. The existence of one may require more work to be done to interconnect the others, so treating the applications in the order received maintains the fairness of the process for all applicants. No comments were received with regard to this subsection, so it remains unchanged in the Final Rule.

Subsection E of Section 11 lays out the scoping meeting timing and generally what information will be discussed and exchanged at the meeting. This section also gives the utility the option to waive the feasibility study, the impact study, or the facilities study by mutual agreement if the utility feels these studies are not required based on the particulars of the customer's generation interconnection. The Final Rule clarifies that the time for holding the scoping meeting, if required, runs from the date notice is sent in Subsection B. This is in response to CMP's comments that it was unclear in the Proposed Rule when these timeframes begin to run.

Subsection F of Section 11 requires the utility to provide a good faith estimate of the cost for a feasibility study, and requires the estimate within 5 Business Days if the customer so requests. The Final Rule has been modified from the proposed rule by specifying Business Days. The change was made in response to CMP's comments. Subsection F also describes the general scope of a facilities study. The subsection also gives the utility the option to waive the impact study if the feasibility study shows no violation of reliability criteria.

Subsection G of Section 11 requires the utility to provide an impact study agreement within 10 Business Days after completion of the feasibility study. The Final Rule has been modified from the proposed rule by specifying Business Days. The change was made in response to CMP's comments. This section also requires that the utility to transfer the application to the RTO or other transmission provider in cases where the interconnection may affect those systems. We make it clear in the Final Rule that projects that have impacts beyond the local T &D system will have to start a new interconnection process with the RTO, since there is no currently no method to transfer the application. This modification is made in response to CMP's written comments.

Subsection H of Section 11 forecloses the utility from charging for review of generators protection equipment when the generators are IEEE 1547 certified. This subsection also says that, "Otherwise a T & D Utility shall conduct a review of generator protective devices for adherence to IEEE Standard 1547." CMP misinterprets the rule in its written comments. The first part of the subsection applies to generators that have already been "certified" as IEEE 1547 compliant under §4 of the Rule. The "otherwise" indicates that review for protective device adherence to IEEE 1547 applies to generators that are not "certified," and there is no bar in this subsection on charging for such review.

Subsections I through O of Section 11 provide greater detail regarding the studies performed for interconnections falling under Level 4 review. MPS suggests that we provide more information in the rule regarding what system impact studies are likely to cost and suggests that they may cost about $12,000 or more for a 600 kW generator. Its concern is that the application fees may confuse customers regarding the expense of these studies. We understand the concern expressed here, but do not see the need to include estimated costs in the rule. These concerns would be better addressed through communication between the utility and the interconnecting customer, and is one of the many reasons Level 4 interconnections include a scoping meeting between the customer and the utility. In most cases customers installing generators with enough capacity to require a system impact study should be sophisticated enough to understand the potential expense. Sellers and installers of systems of this size should be even better informed than the customer in this regard. Since we received no other comments with regard to these sections they remain unchanged in the Final Rule.

Subsection Q of Section 11 allows the parties to incorporate interconnection milestones identified in the study process into the interconnection agreement. These milestones would apply to the utility completing any required system modifications, and to the customer completing certain tasks necessary for proper installation. CMP in its written comments suggests that milestones are required by the rule. This is probably due to the "shall" in the first sentence. Under our reading of the subsection, the imperative language applies to indicating the milestones that come to light in the facilities studies. Indeed, later in the subsection where milestones are required to be incorporated into the interconnection agreement it states "the milestones from the facilities study (if any) shall be incorporated into the Interconnection

Agreement." This clearly indicates that milestones are not required, but it specifies how milestones should be dealt with if any come out of the facilities study.

Subsection R requires the utility to inspect the completed generation installation and to attend any commissioning test required under IEEE standards. No comments were received with regard to this subsection, so it remains unchanged in the Final Rule.

Subsection S requires the utility to provide the customer with written notice that its equipment has been approved for operation. No comments were received with regard to this subsection, so it remains unchanged in the Final Rule.

Subsection T requires interconnecting customers to notify the utility if there is a change to their generator's initial operations date. No comments were received with regard to this subsection, so it remains unchanged in the Final Rule.

Subsection U provides for an application fee of $100 plus $2/kW of capacity, any charges for time spent on study, and the cost of any facilities added by the T & D necessary to accommodate the generator's interconnection. To the extent CMP, BHE, and MPS's comments regarding the appropriate fee level are the same as in earlier sections our response is also the same. No other comments were received regarding this subsection, so it remains unchanged in the Final Rule.

12. General Provisions and Requirements after Interconnection Approval (Section 12)

Section 12 of the final rule establishes the generally applicable provisions and requirements for all levels of review. In Subsection A, pursuant to CMP's written comments, we clarify the Final Rule to require customers to acquire all necessary permits, not just local or municipal permits.

In Subsection C, the meeting with a customer on request was modified to allow for a mutually agreeable time. This was in response to CMP's written comments.

Subsection D of Section 12 provides for an hourly rate for engineering review of $100. We do not change this amount in the Final Rule even though BHE and CMP commented that it was inadequate. CMP's written comments note that the rate is about what the time of one of their internal engineers would cost, but that external engineers may be hired and they would likely be more expensive. None of the commenters to the rulemaking or the inquiry into these standards have provided any detail with regard to an appropriate figure for these costs. The purpose of fixing this expense for the customer is to provide some predictability, and to avoid time spent between the Customer and T & D Utility discussing such charges. The parties have not submitted evidence showing that the amount here is inadequate and, if

anything, CMP's acknowledgement that this is about the same as their rate for internal engineering reviews weighs in favor of keeping the rate at this level.

Subsection E of Section 12 specifically forecloses utilities from charging for disconnect switches if the generator is in compliance with the applicable standards. MPS, BHE, and CMP all object to this provision in their comments. We make no changes to this provision in response to their comments. We are convinced that the small size of generation to which this applies and the fact that the generators are certified inverter based systems address their safety concerns. CMP has stated that it does not routinely require disconnect switches for these types of systems though it can in its discretion, which helps demonstrates that they are unnecessary in many circumstances.

We are also mindful of the comments of Mr. Carpenter with regard to utility disconnect switches. He points out that there could be liability concerns if a utility worker is injured while working on the customer's side of the meter, or entering the customer's property to gain access to a switch. We are also mindful of IREC's comment regarding unnecessary expenses. Though the cost of a disconnect switch is small relative to the whole generation system, it is an incremental cost that can be eliminated safely with smaller inverter based certified generation systems. The liability concerns raised by Mr. Carpenter serve to illustrate other costs that can be avoided by leaving this provision as is. Pursuant to CMP's comments the Final Rule clarifies that to the "applicable standards" are those in § 4 of the rule.

In its comments on the proposed rule, CMP suggested that the insurance provisions from FERC's SGIP be incorporated. Rather than adopt those provisions a new subsection F was added to the Final Rule where insurance provisions have been incorporated, many of the provisions were taken from the recently released 2009 version of the IREC Model Interconnection Rules[10]. The levels set out in the IREC 2009 Model Rules appear reasonable, and by providing set limits it allows for the greater predictability of costs that is one of the goals of establishing these rules. Given the potential size of the generation that may interconnect under these rules it is reasonable to allow the T & D Utility to require some insurance, subject to limits, to protect it against the possibility of damages resulting from customer sited generation. The IREC 2009 Model Rules set out various maximum levels of liability coverage. These levels are broken into inverter based and non-inverter based with the inverter based levels being lower. The reasoning behind this is that by design generation with inverters are less likely to cause damage to the T & D Utility's system.

Subsection G of Section 12 allows utilities to install additional protective equipment for certified generation, but only at their own expense, and only if the equipment does not negatively affect the customer's generation. CMP objects that

---

[10] IREC, *IREC Model Interconnection Procedures: 2009 Edition*, available at http://irecusa.org/fileadmin/user_upload/ConnectDocs/IREC_IC_Model_October_2009.pdf (last visited 11/19/09).

the utility should be allowed to install whatever protective equipment it deems necessary and at the customer's expense. While we understand CMP's safety concerns we do not adopt changes pursuant to their written comments. A certified generator package should be safe without the need to install additional equipment, and CMP has made no effort to challenge the efficacy of applicable standards in §4 of the rule. Where it has specific concerns it may request a waiver of the rule, or install protective equipment at its own expense if it does not harm the functioning of the customer's equipment. If its safety concerns are severe enough, provisions of this rule and the associated agreements allow a utility to disconnect the equipment.

In response to CMP's comments on Subsection H, formerly Subsection G, the rule has been modified to make clear that the metering and monitoring equipment shall be provided in accordance with Chapter 313 requirements for customers who will be net energy billing under that rule. It also clarifies the section for non-net energy billing customers. For such customers it provides that if there are no tariff provisions for metering and monitoring customer generators then the customer will be responsible for the reasonable costs of installing additional metering.

Subsection I refers to the interconnection agreements included with the standards forms that will be adopted by the Commission through a separate order. In the Final Rule is has been modified to make it more clear which agreements are to be used for each Level of interconnections.

Subsection J sets out how the various fees are to be documented by the utility. No comments were received regard this provision, so the subsection remains unchanged in the Final Rule.

Subsection K allows for periodic testing of certain equipment. CMP requested that the rule require it receive reasonable advanced notice of any testing, and the right to witness. We have added this requirement to the Final Rule. CMP further requests that details regard the testing be available to it. We have also added a provision giving utilities access to this information.

Subsection L, formerly Subsection K, of Section 12 gives the utility the right to inspect the customer's facility for IEEE 1547 compliance, and the right to disconnect the customer if such non-compliance could adversely affect the reliability of the electric system. CMP's written comments express concern that a utility should be allowed to disconnect the customer generator for several situations not listed in this subsection. We are mindful of safety considerations and operational issues that may occur, which is why the forms and agreements associated with this rule allow temporary disconnection pursuant to terms that would cover the situations described by CMP. These are not dealt with in the rule since the rule is primarily concerned with the interconnection process. The interconnection agreements have more provisions concerned with the operation of interconnected generators once they have passed through the process set out in this rule.

13. Dispute Resolution (Section 13)

Section 13 provides for disputes between utilities and customers to be resolved by the Maine Public Utilities Commission. CMP makes several comments to this section. First, it comments that this should be the section that allows for customer complaints with regard to missed deadlines by the utility or other problems with the utility. That is how we understand the section, though we disagree that the dispute resolution section should be more completely described at this point in time. This section was drafted with the intent of providing the Commission and any disputing parties the flexibility to tailor the dispute resolution to fit disputes that may arise under this rule. One of the reasons we prefer this flexibility is that newness of the rule makes it difficult to anticipate what sorts of conflict may arise under it. In some cases informal teleconferences may be sufficient, while in others requests for advisory rulings by the Commission or other more formal processes may be required. We anticipate that all of these mechanisms will be available under the current rule.

CMP makes further written comments on § 13 regarding the effect that complaints under the rule will have on the Service Quality Index calculations under its Alternative Rate Plan. We agree that this rule was not contemplated at the time of the ARP, and that it is not appropriate to include complaints related to the Final Rule in the SQI calculations.

CMP also comments that the rule does not provide for situations where a customer fails to comply with provisions of this rule and installs generation without following the interconnection process. This rule is intended to provide a standardize procedure for interconnections that fall within State jurisdictional boundaries. Attempts by customers to operate in parallel with the T & D system using generation not installed according to this rule should not be allowed. We agree that in such cases the utility may need to take action to protect the safety and reliability of its system to the extent other rules, tariffs and terms and conditions allow them to do so. Where there are disputes about whether the proper procedure was followed under this rule we anticipate they will be brought to us under §13.

14. Waiver (Section 14)

This last section of the rule contains the Commission's standard waiver and exemption provision.

Accordingly, we

O R D E R

1. That the attached Chapter 324, Small Generator Interconnection Procedures, is hereby adopted;

2. That the Administrative Director shall file the final rule and related materials with the Secretary of State;

3. That the Administrative Director shall notify the following of the adoption of the rule:

a. all transmission and distribution utilities in the State;

b. all person who filed comments in the inquiry, *Inquiry into Interconnection Standards for Small Renewable Energy Facilities,* Docket No. 2008-186 (April 23, 2008);

c. all persons who have commented in this rulemaking, Docket No. 2009-219; and

d. all persons who have filed with the Commission within the past year a written request for notice of rulemakings;

4. That the Administrative Director shall send copies of this Order and the attached rules to the Executive Director of the Legislative Council, 115 State House Station, Augusta, Maine 04333-0115 (20 copies).

Dated at Hallowell, Maine, this 4th day of January, 2010

BY ORDER OF THE COMMISSION

_____

Karen Geraghty
Administrative Director

COMMISSIONERS VOTING FOR: Reishus
Vafiades

COMMISSIONERS ABSENT: Cashman

NOTICE OF RIGHTS TO REVIEW OR APPEAL

5 M.R.S.A. § 9061 requires the Public Utilities Commission to give each party to an adjudicatory proceeding written notice of the party's rights to review or appeal of its decision made at the conclusion of the adjudicatory proceeding. The methods of review or appeal of PUC decisions at the conclusion of an adjudicatory proceeding are as follows:

1. Reconsideration of the Commission's Order may be requested under Section 1004 of the Commission's Rules of Practice and Procedure (65-407 C.M.R.110) within 20 days of the date of the Order by filing a petition with the Commission stating the grounds upon which reconsideration is sought.

2. Appeal of a final decision of the Commission may be taken to the Law Court by filing, within 21 days of the date of the Order, a Notice of Appeal with the Administrative Director of the Commission, pursuant to 35-A M.R.S.A. § 1320(1)-(4) and the Maine Rules of Appellate Procedure.

3. Additional court review of constitutional issues or issues involving the justness or reasonableness of rates may be had by the filing of an appeal with the Law Court, pursuant to 35-A M.R.S.A. § 1320(5).

Note: The attachment of this Notice to a document does not indicate the Commission's view that the particular document may be subject to review or appeal. Similarly, the failure of the Commission to attach a copy of this Notice to a document does not indicate the Commission's view that the document is not subject to review or appeal.