

**PUBLIC UTILITY COMMISSION OF OREGON
AHD REPORT
PUBLIC MEETING DATE: February 6, 2024**

REGULAR ___ CONSENT ___ RULEMAKING X EFFECTIVE DATE N/A

DATE: February 1, 2024

TO: Public Utility Commission

FROM: Christopher J. Allwein

THROUGH: Diane Davis, Nolan Moser **SIGNED**

SUBJECT: OREGON PUBLIC UTILITY COMMISSION ADMINISTRATIVE HEARINGS DIVISION: (Docket No. AR 659) Requesting adoption of new rules and rule amendments for Chapter 860, Division 39 Net Metering Rules and Division 82 Small Generator Interconnection Rules. The proposed rule revisions are included in Attachment 1.

AHD RECOMMENDATION:

Adopt the proposed permanent new rules and rule amendments presented in Attachment 1.

DISCUSSION:

Issue

Whether the Public Utility Commission of Oregon (Commission) should adopt the new and amended rules for Chapter 860, Division 39, regarding the net metering rules, and Division 82, small generator interconnection rules.

Applicable Law or Rule

Under Oregon Revised Statute (ORS) 756.060, the Commission “may adopt and amend reasonable and proper rules and regulations relative to all statutes administered by the commission....” The Oregon Administrative Procedures Act sets forth the process for rulemaking.

Under ORS 756.040, the Commission has authority to supervise and regulate every public utility in Oregon, and to do all things necessary and convenient in the exercise of such power and jurisdiction.

In 2005, the Oregon Legislature enacted Senate Bill 84 authorizing the Commission to adopt rules increasing the size, from the minimum of 25 kilowatts (kW), of net metering facilities eligible to interconnect to electric utilities.¹

Under ORS 757.300(7), the Commission may adopt rules “to ensure that the obligations and costs associated with net metering apply to all power suppliers within the service territory of a public utility, municipal electric utility, electric cooperative or people’s utility district.” ORS 757.300(8) states that the statute section “applies only to net metering facilities that have a generating capacity of 25 kilowatts or less, except that the commission by rule may provide for a higher limit for customers of a public utility.”

In 2009, the Commission adopted OAR Division 82 of Chapter 860 Small Generator Interconnection Rules, which outline the interconnection requirements for Oregon-jurisdictional generators up to 10 MW in size.²

Analysis

Background

The Commission opened Docket No. UM 2111 on July 6, 2020, to address a range of interconnection issues arising across generator types (i.e., net metering, small generator, large generator, community solar projects). Given the breadth of issues, Staff conducted an open scoping process focused on identifying issues that would reduce barriers to projects that provide direct customer and community benefits and decarbonization benefits, including smarter, flexible Distributed Energy Resources (DERs) and resiliency-focused projects. The issues were divided into five groups.

On April 19, 2022, the Commission approved the scope for the first of set issues to address (“Group 1”), which include:

- Modernizing the screening and interconnection study thresholds and the technologies considered when an upgrade is needed.
- Incorporating updated standards such as IEEE 1547-2018.
- Incorporating advanced inverters, storage, islanding, and other modern configurations.³

During the Group 1 informal process, Staff and participants worked through proposed rule revisions in these three categories, circulating and responding to each other’s proposed redlines of the administrative rules with a goal of reaching agreement on as

¹ See ORS 757.300(8) and *In the Matter of a Rulemaking to Adopt Rules Related to Net Metering*, Docket No. AR 515, Order No. 07-319 (Jul. 24, 2007).

² *In the Matter of Public Utility Commission of Oregon Staff’s Investigation Relating to Electric Utility Purchases from Qualifying Facilities*, Docket No. UM 1129, Order No.07-360 (Aug. 20, 2007).

³ See Order No. 22-126, memorializing the Commission’s decision to adopt Staff’s final proposed scope for Group 1 issues in the interconnection modernization investigation (Apr. 22, 2022).

many issues as possible. Staff and participants were able to reach agreement on several technical, policy, and procedural changes for Division 039 and Division 082 rules. The outstanding issues discussed below require consideration and resolution by the Commission.

Overview

At the August 22, 2023 Regular Public Meeting, the Commission adopted Staff's recommendation to open a formal rulemaking process. AHD filed the notice of proposed rulemaking on September 25, 2023, and served notice on September 29, 2023, to the AHD Administrative Rule Electric Notification List, the AR 659 and UM 2111 service lists, and to certain legislators as required by ORS 183.335. The proposed rules were published in the Oregon Secretary of State's October 1, 2023 bulletin.

AHD held a rulemaking hearing on October 17, 2023. All Commissioners attended the hearing. Representatives from Staff; the Interstate Renewable Energy Council, Inc. (IREC); Portland General Electric, PacifiCorp, and Idaho Power (the Joint Utilities); Community Renewable Energy Association (CREA); the Renewable Energy Coalition (the Coalition); and the Oregon Solar + Storage Industries Association (OSSIA) provided comment at the hearing.

Written comments were due November 7, 2023. Staff, the Joint Utilities, IREC, ProtoGen, and CREA, the Coalition, and the OSSIA (collectively, the Interconnection Trade Groups, or ITG) submitted joint comments on or before the due date. OSSIA also submitted separate comments.

On November 20, 2023, the ALJ issued a ruling extending the deadline for comments. The ruling noted that the proposed date for requiring compliance with the IEEE 1547-2018 standard appeared to be incompatible with the proposed process for utility interconnection requirement handbooks (handbooks) update and review. On or before the due date of November 29, 2023, the Joint Utilities, Staff, and the ITG submitted additional comments.

Proposed Rules

The proposed new rules and rule amendments are presented in Attachment 1. The discussion below addresses outstanding substantive items and provides recommendations for resolution based on comments received from participants. The items are divided into the same three groups utilized for the rulemaking hearing: 1) Technical Items, 2) Process Items, and; 3) Other Items (presented by participants during the formal rulemaking process).

1. *Technical Items*

a. Compliance Date for IEEE 1547-2018 (Advanced Inverter Equipment)

The proposed amendments to OAR 860-082-0030 include the incorporation of updated standard requirements to interconnect DERs to utility power grids.⁴ IEEE 1547-2018 (2018), provides technical specifications for and testing of the interconnection and interoperability between utility electric power systems and DERs. IEEE 1547.1 (2020) updates the testing standards for equipment manufacturers.

Participants agreed that the commencement date for requiring equipment that meets the updated standards should begin after a date certain to be presented in the rule, allowing for utility handbooks and Energy Trust Information to be updated to reflect the new standard.

The Joint Utilities explain that each utility must determine and submit specific, preferred default settings for small generator facilities complying with the IEEE 1547-2018 standard. In addition, some of the utilities will need to update other portions of their handbooks to reflect technical changes that will be a part of the final rules.

To accommodate this process, Staff and the Joint Utilities recommend May 1, 2024, but that was under the assumption that the final rules would be adopted on December 28, 2023.⁵ The Joint Utilities state that they would not oppose a later date, depending on when the rules are adopted and to accommodate discussion on handbook updates.⁶ To accommodate the additional time for consideration, AHD proposes modifying the commencement date to June 1, 2024.

Recommendation:

Adopt the amended rule with the AHD revision of June 1, 2024, as the date requiring interconnection applicants to begin using advanced inverter equipment compliant with IEEE 1547-2018.⁷

⁴ See the August 15, 2023 Staff Report at 8-9 (Dockets UM 2111 and AR 659). The current rule references the 2003 IEEE standard.

⁵ During the informal and formal rulemaking process, various dates were proposed for the commencement of the updated standards requirement. January 1, 2024, was the initially proposed date for this requirement—earlier in the process—agreed upon by participants. Staff and the Joint Utilities agree that utilities will need additional time to update associated utility requirements within their handbooks that correspond to this more recent standard. Both recommended May 1, 2024, with the assumption that the rules would be considered and adopted in December 2023. See, Joint Utilities comments at 1-3 (Nov. 29, 2023) and Staff comments at 2 (Nov. 29, 2023).

⁶ Joint Utilities comments at 4 (Nov. 29, 2023).

⁷ See the Handbook Updates discussion below in *Process Items*, Part “a.”

b. High-speed Reclosing

OAR 860-082-0033 is a new proposed rule that governs export controls to facilitate interconnection of net metering and small generator projects that include storage. The rule presents requirements for limited and non-exporting generators. The primary disagreement in the proposed rule is whether a utility may require protective relays to limit inadvertent export on circuits.⁸ The relevant portion of Staff's initial, proposed rule requirement states:

When a project is located on a circuit using high-speed reclosing the utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing.

This requirement applies to certain devices and appears in the proposed rule in three different rule paragraphs: 1) OAR 860-082-0033(3)(a)(A); 2) OAR 860-082-0033(3)(a)(B); and 3) OAR 860-082-0033(3)(b)(A). The Joint Utilities state that this additional requirement is necessary for certain situations in Oregon, and Staff believes it is prudent to include as a part of the rule.

IREC urges the Commission to reject this requirement. IREC explains that the working group in UM 2111 began with consensus to revise Oregon's interconnection rules to explicitly authorize the use of energy storage and other modern configurations that limit the export of DERs. The working group began with the model rule from the *Building a Technically Reliable Interconnection Evolution for Storage* (BATRIES) tool kit. IREC states that the model rule was developed to minimize the back and forth between a customer and a utility, and that this addition to the model rule undermines a customer's ability to design projects appropriately.⁹

IREC states that, while a DER located on a circuit using high speed reclosing may need protection equipment that responds to adverse distribution system conditions in under 2.0 seconds, modifying the export controls section is unnecessary to accomplish this. DERs use either a certified inverter or a multi-function relay to protect from adverse distribution system conditions. In either case, adverse system conditions would cause the DER to trip offline within the appropriate time.¹⁰

IREC further elaborates that this provision is unnecessary on circuits with high-speed reclosing because advanced inverter technology will automatically trip the generation offline faster than 2.0 seconds when necessary, thus addressing the utilities' concerns.¹¹

⁸ These protective relays would be in addition to protection that may be provided by other equipment.

⁹ IREC comments at 10 (Nov. 7, 2023).

¹⁰ *Id.* at 11

¹¹ Rulemaking Hearing at 23:18-28:25 (Oct. 17, 2023).

ProtoGen states opposition to the less-than-2.0-second-delay language and comments that the Joint Utilities have taken the most conservative approach, which it views as unnecessary.¹²

The Joint Utilities support Staff's inclusion of this requirement. The Joint Utilities explains that the provision is necessary for the safe and reliable operation of the Joint Utilities electric systems and urge the Commission to maintain it in the proposed rule. The Joint Utilities note that both PGE and PacifiCorp utilize the less than 2.0 second reclosing standard in certain circumstances to ensure system reliability and safety.

The Joint Utilities explain that the proposed language provides a utility discretion to ensure that a DER system is appropriately coordinated in responding to abnormal operating conditions or preventing unintentional islanding where the DER is operating within an area with a high-speed reclosing scheme:

If a circuit recloses, or reconnects to the system, while a DER on the circuit is still generating, then the reclosing occurs out of synchronism. This is the hazardous scenario that will potentially exist if PGE and PacifiCorp are not allowed to continue their existing practices.¹³

The Joint Utilities further note that the IEEE standard is only a minimum functional requirement:

The IEEE standard provides only the minimum functional technical requirements and recognizes that DERs need to be locally integrated, which may necessitate supplementing the standard to address specific situations. Recognizing that utilities are differently situated and employ a wide range of practices and equipment, the IEEE standard includes requirements for mutual agreement and/or reclosing coordination, which may serve to either extend or reduce the default clearing times depending on the circumstances.¹⁴

The Joint Utilities state that because the use of high speed reclosures is not widespread, it is not surprising that IREC may be unfamiliar with this issue. The Joint Utilities opine that the proposed rule language is intended to supplement the IEEE standard to cover specific situations that exist on some circuits for certain utilities in Oregon.

The Joint Utilities disagree with the IREC claim that IEEE 1547-2018 compliant inverters can respond to all abnormal conditions in less than 2.0 seconds. The Joint Utilities explain that the less than 2.0 second time applies to detecting only certain conditions, such as under voltage. The Joint Utilities state that the IEEE standard expressly acknowledges these limitations:

¹² ProtoGen, Inc.'s Comments at 1 (Oct. 26, 2023).

¹³ Joint Utilities Response Comments at 5-6 (Nov. 7, 2023).

¹⁴ *Id.* at 6, discussing the IEEE 1547-2018 Standard introduction and Section 6.3.

The IEEE standard itself highlights inverter limitations: “It is important to bear in mind that islanding detection methods in inverters are generally designed to detect islands with a generation-load balance. They are *not* intended to detect faults and should not be relied on for that purpose.”¹⁵

The Joint Utilities further explain that the less than 2.0 second requirement applies to an open phase condition in addition to an unintentional islanding condition. Therefore, according to the Joint Utilities, while the inverter may be capable of detecting an islanding condition, it may be incapable of detecting an open phase condition. Thus, the Joint Utilities conclude that current technology—even inverters that meet the minimum IEEE 1547-2018 standard—may not be able to address all of utilities’ safety concerns regarding current system issues.

During the rulemaking hearing, the idea of ensuring flexibility in the rule language was discussed to accommodate eventual or proven technology upgrades that may render additional equipment unnecessary and diminish the need to revise the rule language in the near term. The Joint Utilities conclude that Staff’s initial proposed language provides flexibility for the incorporation of future technological developments because the proposed rule states that the utility “may” require additional equipment, noting that in the future, such additional equipment may be unnecessary.

Staff acknowledges the Joint Utilities’ contention that the current rule language allows for flexibility and “futureproofing,” but expresses its concern that rule language is ambiguous in terms of when or how a utility will apply this requirement. Staff proposes two rule changes to address this. First, Staff recommends that the Commission direct the utilities to include in their handbooks specific circumstances in which the utilities will require additional protective equipment, including a list of manufacturers or specific inverter functionality that would alleviate the need for additional equipment. Second, Staff recommends additional language requiring a utility to provide an explanation when additional equipment is required:

When a project is located on a circuit using high-speed reclosing the utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing if the utility provides the rationale for the requirement as well as any other equipment modifications that would alleviate the need for additional equipment.¹⁶

Staff’s updated proposal continues to apply only in specific circumstances in which a utility may require additional equipment so that reclosing occurs in less than 2.0 seconds. The proposed rule reflects the IEEE 1547-2018 standard, which allows for

¹⁵ Id. at 7, citing IEEE 1547-2018, Section 8.1.3, n.113 (Emphasis original).

¹⁶ Staff comments at 3 (Nov. 7, 2023).

supplementation of its requirements to address certain situations and provides the utilities with discretion to require supplemental equipment to ensure the reclosing is safe in such situations. This proposal was presented in Staff's comments, which were submitted on the due date for written comments. No alternative recommendations or comments on Staff's proposal were submitted.

Analysis

The additional language proposed by Staff addresses the ambiguity and future-proofing concerns by requiring utilities to identify situations requiring additional equipment and by requiring utilities to explain the technology sufficient to address such situations. The utilities may provide information in their handbooks to explain specific circumstances in which interconnection applicants will be required to add additional, protective equipment to satisfy the reclosing speed and any manufacturers, equipment, or inverter functionality that would suffice as such equipment becomes known, available and may be relied upon to meet the standard. This allows the utilities to state when additional technology may be required and provide updates as needed, via the handbooks, without having to revisit the rule.

AHD proposes to revise Staff's updated language for clarity. AHD's revisions maintain utility discretion to address safety concerns and retains the requirement for an explanation of the circumstances and additional equipment clarification to interconnection applicants by the utility:

When a project is located on a circuit using high-speed reclosing the utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing, as well as any other equipment modifications that would alleviate the need for additional equipment. When instituting this requirement, the utility must provide:

- i. An explanation for the requirement to the interconnection applicant;
- ii. A list of additional equipment needed to satisfy the requirement;
- iii. A list of equipment modifications or options that would alleviate the need for additional equipment.

Recommendation:

Adopt the new rule, as updated by Staff, with AHD revisions.

2. Process Items:

- a. Utility Interconnection Handbook Review Process

Proposed amendments to OAR 860-082-0030(1)(b) require utilities to provide public notice of handbook updates, opportunity for comment, and a utility response to any comments received. The handbooks are specific to and maintained by each utility.

Participants reached agreement on the incorporation of several technical specifications in utility handbooks. Participants disagreed on notice and process for handbook updates. In their comments, the ITG propose additional process for handbook updates for inclusion in the rules. First, the ITG recommend that a utility provide actual notice to customers of any handbook updates. Second, if a customer challenges any proposed updates, the utility must submit any challenged revisions to the Commission for review and approval. The burden would be on the utility to demonstrate that its challenged revisions are reasonable. Finally, the ITG propose that utilities should be required to provide the Commission with a “compliance filing” that would include the default settings provided in proposed rule OAR 860-082-0030(1)(c) for review and approval.¹⁷ IREC noted its support for this proposal during the rulemaking hearing and in written comments.¹⁸

The Joint Utilities oppose the additional recommendations by the ITG. Regarding the notice issue, the Joint Utilities assert that providing notice to all interconnection customers would be burdensome and confusing. The Joint Utilities state that they have thousands of existing small interconnection customers, including net metering customers, that are not likely to be impacted by prospective changes in the utilities’ handbooks.¹⁹ Providing actual notice to all current interconnection customers would create confusion and customer inquiries that would require significant response time by the utilities. Instead, the Joint Utilities note that rule-required notice of any handbook updates will be provided via the Joint Utilities’ OASIS websites that provide communication to customers. The Joint Utilities note that this method is consistent with FERC requirements for updating their open access transmission tariffs.

Staff clarifies that its intent for notice in the proposed rules was meant for installers and other entities that regularly engage with a utility:

Staff also seeks to clarify that notifying interconnection customers in this context means notifying the solar installers that are responsible for interfacing with the utility on behalf of their clients, and not directly contacting retail customers that have net metering systems. Staff also believes that the utilities can consult with Energy Trust of Oregon and Oregon Solar and Storage Industry Association for further support informing the net metering installer community of Handbook changes.²⁰

¹⁷ ITG Comments at 2 (Oct.12, 2023).

¹⁸ Rulemaking Hearing recording at 1:16:30-1:19:05 (Oct. 17, 2023) and in IREC written comments at 14-15 (Nov. 7, 2023).

¹⁹ Joint Utilities’ Response Comments at 9-10 (Nov. 7, 2023).

²⁰ Staff’s comments at 5-6 (Nov. 7, 2023).

The ITG clarify in their final comments that it was advocating for utilities to provide notice to Tier 4 small generation interconnection customers rather than “all interconnection customers including net metering customers.”²¹

Staff proposes additional language to the rule subsection to address some of the ITG notice and process concerns that provide specific time frames for review and response of handbook changes, and to state that Commission involvement in the process may be requested for contentious issues:

Interconnection requirements handbook. Each public utility must post an interconnection requirements handbook on its public website. Prior to revising its interconnection requirements handbook, a public utility must provide public notice on its website and to interconnection customers. The utility must provide and an opportunity a minimum of 30 days for to stakeholders to comment and the public utility must provide public responses within 30 days respond to any comments received. Parties may request Commission intervention if concerns raised are not fully addressed by the utility.²²

No comments on Staff’s proposal were submitted.

Regarding handbook content disputes, the Joint Utilities state agreement with the ITG that any handbook changes in contention may be brought before the Commission. However, the Joint Utilities note that any issues with utility handbook updates should be brought before the Commission and articulated by the objecting customer. The Joint Utilities explain the difficulty of requiring a utility to adequately voice the concern of another entity to its own proposed changes. The Joint Utilities support the rules as proposed.²³

Staff considers the ITG approach for handbook disputes to be cumbersome and potentially causing more issues than resolution. Staff states that requiring the utility to present another person or entity’s concerns will create “additional disputes and complexity” and possibly blunt participation in the informal process.²⁴ Staff clarifies that the “commission intervention” language above is a requirement placed on the person or entity that disagrees with a utility-proposed change to its interconnection requirements or policies.

Finally, Staff notes that the ITG proposal also includes requirements for an initial compliance filing by the utilities to review and ensure the updates incorporate the preferred default settings. Staff explains that such a requirement is best addressed by a Commission order rather than incorporation into administrative rules.

²¹ ITG comments at 1-2 (Nov. 29, 2023).

²² Staff Comments at 5-6 (Nov. 7, 2023).

²³ Joint Utilities Comments at 10-11 (Nov. 7, 2023).

²⁴ Staff Comments at 5 (Nov. 7, 2023).

Analysis

Staff's proposed, updated language is reasonable and provides notice to specific customers and other groups named by Staff and the ITG. Any additional details may be determined via the handbook update discussions. Staff's language also presents specific direction regarding the process for handbook updates. AHD recommends revising this language by substituting the phrase "interested persons" for the terms "stakeholders" and "parties" in Staff's proposed, updated rule:

Interconnection requirements handbook. Each public utility must post an interconnection requirements handbook on its public website. Prior to revising its interconnection requirements handbook, a public utility must provide public notice on its website and to interconnection customers. The utility must provide and an opportunity a minimum of 30 days for to stakeholders interested persons to comment and the public utility must provide public responses within 30 days respond to any comments received. Parties Interested persons may request Commission intervention if concerns raised are not fully addressed by the utility.²⁵

Existing Commission rules provide multiple options for resolution of disputed issues.²⁶ Any outstanding issues arising from the handbook update and review process set forth in the rules may be brought to the Commission, via one of these options, for investigation and resolution.

Staff anticipates facilitating the handbook review process subsequent to consideration and adoption of the rules:

1. Identify areas where the interconnection requirements are contained, be it tariff, handbook or some other document, collectively referred to as "handbooks;"
2. Ensure handbook information is posted online;
3. Follow the process listed in OAR 860-082-0030(1)(b)-(c), and;
4. Provide proposed revisions to UM 2111 parties that will align handbooks with rules changes following the conclusion of the formal rulemaking process.
5. Present proposed revisions at a workshop for UM 2111 and any other interested parties.²⁷

²⁵ AHD proposed substitutions are double-underlined.

²⁶ OAR 860-001-0360, -0390, and -0400 provide information on filing a complaint pursuant to ORS 756.500, which allows any person or the Commission to file a complaint regarding entities regulated by commission statutory authority; 860-029-0100 allows a qualifying facility to file a complaint involving a power purchase agreement; 860-082-0085 provides for an interconnection customer or applicant to file a complaint to enforce an interconnection agreement; Division -002 governs alternative dispute resolution as a supplement to these rule provisions.

²⁷ See Staff Comments at 5 (Nov. 7, 2023) referencing Staff's Memorandum at 11 (Aug. 15, 2023).

In comments, Staff and the Joint Utilities propose different procedural timelines for the above process. A final procedural schedule for handbook updates will need to be developed by Staff and participants after this rulemaking is completed.²⁸

Finally, it should be noted that the ITG recommendation to require an initial “compliance filing” that would include updating the default settings provided in proposed OAR 860-082-0030(1)(c) is already required by the proposed rule and included in Staff’s proposed process.

Recommendations:

Adopt the proposed rule amendments, as updated by Staff, and with AHD revisions.

In the order, direct Staff to develop and implement a schedule for initial utility interconnection handbook updates based on rule requirements and in accordance with Staff’s proposed process above.

b. Minor Equipment Modification

Staff proposes amendments to OAR 860-082-0010(27) to update the definition of minor equipment modifications to provide some flexibility for projects in a utility queue. Disagreement remains on the percentage by which an applicant may reduce the nameplate rating and/or export capacity of a small generator facility. The proposed reduction percentage, listed in proposed subsection (c), is as follows:

The update includes a reduction in the nameplate rating and/or export capacity of the small generator facility of 10 percent or less provided that a change made to a small generator facility with a pending completed application must not adversely impact lower queued projects [...].

Staff states that the proposed adjustment is an opportunity for projects in the interconnection queue to adjust their nameplate by up to ten percent—without requiring utility approval as required by the current rule—if the adjustment does not impact lower queued projects. Staff further states that clear rules about adjustments available to higher queued projects will allow lower-queued projects to plan for potential changes in higher-queued projects and make decisions accordingly.

The ITG note the term “minor equipment modification” also appears in OAR 860-082-0025(1)(c), which requires an applicant to withdraw a pending, completed application if the applicant proposes any change other than what is allowed by the proposed rule above. Therefore, the ITG propose that the rule provide greater flexibility to minimize the potential of applicants having to withdraw a project. The ITG recommend a 60 percent reduction in nameplate capacity prior to execution of a system impact study should be allowed, along with an additional 15 percent reduction allowed prior to execution of a facilities study. The ITG also recommend that these modifications should

²⁸ Staff’s Comments at 2 (Nov. 29, 2023); Joint Utilities’ Comments at 4 (Nov. 29, 2023).

be allowed without material modification review of the impact on lower queued customers. The ITG state that capacity increases should also be permitted where there is no impact to lower queued customers.

First, the ITG state that the smaller proposed reduction allowance, coupled with the prohibition on adverse impacts on lower-queued customers limits the right to capacity reduction to the point of having little value to an interconnection customer. The ITG explain that, even with more information being provided by rules and other updates, interconnection customers need the capability to act on that information with flexibility greater than is provided in the proposed rule to right-size the project to the grid. In addition, capacity reductions may be needed during the development process for several reasons beyond the interconnection customer's control, "including permitting issues and other development considerations that are moving in tandem with the interconnection process."²⁹ The ITG note that reduction allowances and other design changes are generally supported by the BATTRIES Toolkit in certain circumstances.³⁰

Next, the ITG support these recommendations by noting that its proposed reduction allowances align with some recent changes made by the Federal Energy Regulatory Commission (FERC) to its reduction policies for large generator interconnection procedures and for small generators in some circumstances.³¹ ITG note that the Oregon Public Utility Commission adopted similar rules for large generators.

Finally, the ITG note that reductions made to avoid potentially costly network upgrades and which may adversely impact lower-queued customers are a part of the process and represent "how a properly functioning serial interconnection queue should work, and a higher queued generator has a de facto higher priority right relative to lower queued projects."³²

The Joint Utilities state their opposition to the ITG proposal by noting that the current proposal "balance[s] the potential need to resize a project with the rights of those lower-queued applicants who could be significantly affected by the size change."³³ The Joint Utilities speculate that the ITG proposal could increase the length and cost of the interconnection process for lower-queued applicants, and note that such reductions will not provide the utility an adequate indication of what the actual size of the project will be.

In addition, the Joint Utilities note that the ITG proposal will have unintended implications for other rules that rely on the proposed definition. The Joint Utilities explain that the proposed rule change was assumed to apply across the current and proposed rules. The Joint Utilities and Staff each note that certain additional rules will need to be

²⁹ ITG Comments at 10 (Oct. 12, 2023).

³⁰ *Id.* at 11.

³¹ ITG Comments at 12 (Oct. 12, 2023).

³² *Id.* at 15.

³³ Joint Utilities' Response Comments at 12 (Nov. 7, 2023).

changed if the ITG proposal is adopted. The ITG do not address how their proposal would impact other rule provisions.

In its response, Staff concludes that the ITG proposal may not be construed as a “minor equipment modification” and does not support the ITG reduction amounts. Staff proposes keeping the ten percent reduction but removing the consideration for lower queued projects, in response to the ITG comments, as follows:

OAR 860-082-0015(27)(c) Includes a reduction in the nameplate rating and/or export capacity of the small generator facility of 10 percent or less ~~provided that a change made to a small generator facility with a pending completed application must not adversely impact lower queued projects[...].~~³⁴

Analysis

No alternative recommendations or comments on Staff’s proposal were submitted. Staff’s proposed update continues to provide flexibility for an interconnection customer beyond the current rule—allowing an applicant to make changes without requiring permission from the utility—and the update eliminates consideration for lower-queued projects as recommended by the ITG. The ITG proposal does not take into account the other rule provisions that rely on “minor equipment modifications,” and it is therefore uncertain how such a proposal would impact these other rules. AHD concludes that a comprehensive understanding of where the term is used in other rules and what additional changes may be needed should take place prior to adopting the ITG reduction proposal.

Recommendation:

Adopt the amended rule as updated by Staff.

c. Timeline for Updating Legacy Utility Data to Export Capacity

Current interconnection rule requirements reference direct current (DC) nameplate capacity. As a part of modernizing the rule requirements, these items will be changed to also reflect export capacity value, which is typically measured at the inverter as an alternating current (AC) nameplate rating. Utilities will need to update their records, or historic legacy data, for existing net metering and small generator projects and update their data collection approach to reflect this change. Several stakeholders recommend that the Commission should require the utilities to complete these updates by a date certain of one year from the date of the order.

The Joint Utilities note they are willing to undertake the update and urge the Commission to adopt the date certain approach. The Joint Utilities note that it will be a burdensome process, in particular for PacifiCorp. PacifiCorp notes that it has over

³⁴ Staff Comments at 7 (Nov. 7, 2023).

17,000 applications to update and that it will take one full-time employee over 2,100 hours to complete this task.³⁵ The Joint Utilities request that PacifiCorp be allowed 18 months to complete its updates.³⁶

Next, in response to requests made by a representative of IREC at the rulemaking hearing, the Joint Utilities state that their intent is to update information “in the appropriate systems as it becomes available and not to hold updated information outside the relevant systems until all information is updated.”³⁷ IREC also requested that the Commission order the utilities share information with Energy Trust of Oregon (ETO). The Joint Utilities state they are already sharing information with ETO informally, and that a formal order is unnecessary.

IREC lists several reasons the utility data should be updated. IREC proposes a process similar to the approach presented by the Joint Utilities.³⁸

Staff noted that the utilities have offered a reasonable approach, but requested the Commission encourage the utilities to focus as much as practicable on the most congested feeders when initially updating data, in a way that will not slow the update process. Staff further requests that the utilities incorporate the updates on a regular basis and begin relying on updated information in any interconnection review process. Staff also believes the utilities should provide regular updates on their progress at six-month intervals.

Analysis

This is a rule-related item that can be addressed as part of the order. All participants agree that the utilities should be ordered to update their legacy data by a date certain from the date of the order. The Joint Utilities agree to share the updated information as it becomes available, and that they are already sharing information with ETO, which possesses a vast database of existing project information prior to 2021. The Order should further direct the utilities to update more congested feeders first, share and use the information as it becomes available, and provide updates to Staff at six-month intervals.

Recommendation:

In the order, require PGE and Idaho Power to complete the update of their legacy data as described above no later than one year from the date of the order. Require PacifiCorp to complete their legacy data update no later than 18 months from the order. Include direction for the utilities to prioritize congested feeders, use and share updated

³⁵ PacifiCorp Representative Loftus at 50:50 (Oct. 17, 2023).

³⁶ Joint Utilities Comments at 19 (Nov. 7, 2023).

³⁷ *Id.* at 20.

³⁸ IREC Comments at 6-10 (Nov. 7, 2023).

information as it becomes available, and provide Staff with progress updates every six months.

d. Timelines for the Execution and Deposit of the Interconnection Agreement

Proposed amendments to OAR 860-082-0025(7)(f) include a requirement for the utility to provide an applicant an executed interconnection agreement upon notice that the applicant passed the screening process, and requires the applicant to return a countersigned agreement in 15 business days along with a deposit:

Interconnection Agreement. If the proposed interconnection is approved and requires no construction of facilities by the public utility, the public utility must provide the applicant an executed interconnection agreement no later than five business days after approving the interconnection.

[...]

If the applicant does not return a countersigned interconnection agreement and any required deposit to the public utility, or request negotiation of a non-standard interconnection agreement, within 15 business days of receipt of an executed interconnection agreement, the application is deemed withdrawn.

Staff notes that requiring the utility to provide an executed agreement eliminates an extra step and is meant to streamline the process. In a compromise, the Joint Utilities agreed to provide the executed agreement as long as the fee deposit is collected with the countersigned agreement. The rule provision retains the requirement for an applicant to return the application in 15 business days.

The ITG request that the process for returning the countersigned agreement be extended to 30 calendar days. The ITG state that FERC procedures provide a customer with 30 days to execute a proposed interconnection agreement or initiate a dispute resolution process by filing an unexecuted agreement with FERC.

The ITG oppose the requirement to provide the deposit at the time the executed agreement is returned. The ITG propose that the deposit should be submitted in accordance with the terms of an interconnection agreement, which should require a deposit to be furnished at a reasonable time closer procurement and construction activities.³⁹ The ITG also express concern that the rules do not specify the amount of the deposit. The ITG recommend that the proposed rule be further amended from “any required deposit” to the following:

If the applicant does not return a countersigned interconnection agreement and any required deposit not to exceed the amount in proposed OAR 860-082-0035(5)(a) [. . .]

³⁹ ITG Comments at 17 (Oct.13, 2023).

The ITG state that the inclusion of their proposed amendment reflects Staff's intent regarding the deposit amounts.⁴⁰

Staff states it is unclear whether 30 days will result in more successful interconnections or simply increase delays in the interconnection queue. Staff notes hesitancy to alter the compromise offered by the Joint Utilities in the informal process.⁴¹ Staff also notes that the utility, by providing an executed agreement, is making a commitment to interconnect a small generation facility via the signed agreement. Therefore, Staff concludes that a deposit from the applicant with the countersigned agreement is reasonable. Staff confirms that the deposit amount is meant to be consistent with OAR 860-082-0035(5)(a)⁴² Staff is amendable to clarifying language.

The Joint Utilities note that the 15-business day requirement mirrors the current rule timeline. In addition, the Joint Utilities note that in the FERC example provided by the ITG may be distinguished by other factors, such as the fact that FERC does not require an executed agreement. The Joint Utilities state that aligning the Commission process with the FERC process would require additional changes and that such an effort would be better suited to subsequent phases of UM 2111.⁴³ On this issue, The Joint Utilities recommend retaining the current rule, or to adopt the proposed rule, which is acceptable to the Joint Utilities, Staff and IREC.⁴⁴

The Joint Utilities note that the deposit requirement and amount is consistent with OAR 860-082-0035(5), which allows a utility to collect a deposit prior to the commencement of work on facilities or upgrades. The Joint Utilities note that collecting the deposit with the countersigned agreement is likely to diminish some potential delays associated with collecting deposits.⁴⁵ The Joint Utilities do not object to the additional language proposed by the ITG to clarify deposit amounts.⁴⁶

Analysis

The proposed rule amendment requiring the utility to provide an executed agreement is an extension of updating the screening process and meant to increase efficiency in the interconnection process for customers. The timeframe is maintained from the current rule. The deposit requirement is also meant to institute an additional efficiency in the interconnection application process. Staff, the ITG and the Joint Utilities all agree that the deposit amount is meant to be consistent with OAR 860-082-0035(5). Therefore, the additional language recommended by the ITG language will be used to amend the proposed rule.

⁴⁰ *Id.* at 19-20.

⁴¹ Staff Comments at 8 (Nov. 7, 2023).

⁴² *Id.* at 11

⁴³ Joint Utilities Comments at 15-16 (Nov. 7, 2023).

⁴⁴ *Id.* at 15

⁴⁵ *Id.*

⁴⁶ *Id.* at 14.

Recommendation:

Adopt the amended rule as updated by the ITG.

3. Other Items

a. ITG Recommendations

The ITG present additional items that it requests to be included as a part of these rulemaking proceedings.⁴⁷ These additional items include:

- Proposed changes to OAR 860-082-0025(7)(f) regarding dispute resolution options.
- Criteria for determining eligibility to proceed for Small Generator Facilities (OAR 860-082-0005(1)).

Regarding the dispute resolution, the ITG note that nothing in the current or proposed rules references the option to initiate dispute resolution for the proposed executed agreement. Based on previous experience, the ITG request additions to the rule to explain that the initiation of a dispute resolution process does not compromise a customer's queue position. The ITG note that this is specified in OAR 860-082-0080 but should also be included in this rule.⁴⁸

The Joint Utilities note that dispute resolution is an issue designated for a subsequent phase of UM 2111. The ITG recommendations were presented at the last meeting during the informal phase and according to the Joint Utilities, did not receive any discussion. The Joint Utilities note that this subject is out of scope for this phase of the rulemaking, would be prejudicial to include due to the lack of discussion, and urge the Commission not to include the proposed language at this point.⁴⁹

Regarding eligibility criteria, the ITG propose updating the small generator interconnection rules presented in OAR 860-082-0005(1). The ITG state that this update is consistent with rules updated in other divisions.⁵⁰ The ITG recommend that the Commission remove the ambiguity between the two sets of rules by aligning the eligibility for the small generator interconnection with the eligibility for standard contracts to limit confusion and to encourage use of storage devices with small generators.⁵¹

The Joint Utilities note that this issue was not discussed in-depth in the informal phase and is outside the scope of this phase. The Joint Utilities state they do not oppose further discussion in a future phase but oppose making this change at this time before

⁴⁷ ITG Comments at 4-7, 22-26 (Oct. 12, 2023).

⁴⁸ ITG Comments at 22-23 (Oct. 12, 2023).

⁴⁹ Joint Utilities Comments at 16-17 (Nov. 7, 2023).

⁵⁰ ITG Comments at 4 (Oct. 12, 2023).

⁵¹ *Id.* at 6.

the implications can be fully considered and discussed.⁵² Staff also notes that parties “were not in consensus” on this recommendation. Staff notes that additional changes may be needed.⁵³

AHD concludes that both issues need additional discussion before recommending any changes.

Recommendation:

No rule changes recommended.

b. Joint Utility Recommendations

In opening comments, the Joint Utilities make a series of recommendations for additional updates to the proposed Division 39 rules and Division 82 rules:

- Delete OAR 860-039-0030(11).
- A series of minor corrections and revisions for clarity in both Divisions.
- Adding Language to OAR 860-039-0035(3)(c).

First, OAR 860-039- 0030(11) is an existing rule that allows an interconnection applicant to resubmit an application denied a Tier 1 for review under Tier 2 or Tier 3. The Joint Utilities recommend deleting this provision because it appears to be re-inserted in the proposed rules by mistake. Proposed rule OAR 860-039-0030(6) is meant to govern this circumstance. The Joint Utilities recommend deleting OAR 860-039-0030(11) if its inclusion in the final rules was accidental.⁵⁴

Next, the Joint Utilities recommend several other non-substantive revisions and corrections to the proposed rules for clarity and consistency purposes. The suggested revisions cover both Divisions and propose to update references to national standards, corrections of acronyms, and clarifying or eliminating some updated terms in certain rule provisions.⁵⁵

Finally, the Joint Utilities recommend an addition to OAR 860-039-0035. At the end of the informal process, participants agreed to remove language that allowed utilities to approve an application with minor modifications under Tier 2 because it was seen as redundant. In their formal phase review, the Joint Utilities note that Tier 2 net metering

⁵² Joint Utilities at 18 (Nov. 7, 2023).

⁵³ Staff Comments at 11-12 (Nov. 7, 2023).

⁵⁴ Joint Utilities Comments at 1-2 (Oct. 13, 2023).

⁵⁵ *Id.* at 3-5. The Joint Utilities propose changes to OAR 860-039-0010, 860-039-0070 and 860-039-075 to match updated term definitions. Because these rules were not part of the notice to the Secretary of State, the changes will be noticed and updated in a subsequent rulemaking.

rules do not have a provision allowing such action, while Tier 1 in Division 39, and all four Tiers in Division 82 do contain such a provision. The Joint Utilities recommend that the approval language appearing as part of the Tier 1 process of Division 39 be repeated in Tier 2 as OAR 860-039-0035(3)(c):

If the public utility determines that the customer-generator can be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.⁵⁶

IREC supports all of these revisions.⁵⁷ Staff also notes support for the Joint Utilities' proposed revisions for the first two items. For consistency, Staff recommends the addition of the language recommended by the Joint Utilities to OAR 860-039-0035, but further recommends including the rest of the Tier 1 language regarding minor modifications, so that the proposed Tier 2 language mirrors the Tier 1 language for this application circumstance. Staff proposes incorporating these combined recommendations via the addition of this subsection:

(5) Approval despite screen failure.

(a) Despite the failure of one or more screening criteria, the public utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability.

(b) If the public utility determines that the customer-generator can be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.

⁵⁶ Joint Utilities Comments at 2-3 (Oct. 13, 2023)

⁵⁷ IREC Comments at 15 (Nov. 7, 2023).

Analysis

The recommendations by the Joint Utilities are reasonable and should be approved. Existing OAR 860-039-0030(11) was inadvertently included in the version of the rules sent to the Secretary of State and is not part of the proposed rule updates.

The minor modifications proposed by the Joint Utilities add clarity and consistency to the proposed rules.

The Joint Utilities' proposed revision for OAR 860-093-0035 also provides consistency and allows a Tier 2 application to be approved, with minor modifications, without having to resubmit an application. Staff's modification of this recommendation provides consistency in the Division 39 rules pertaining to Tier 1 and Tier 2 net metering applications.

Recommendations:

Adopt the proposed rule updates as recommended by the Joint Utilities.

Adopt the proposed rule update for OAR 860-039-0035, as revised by Staff.

AHD RECOMMENDATION:

Adopt the proposed permanent new rules and rule amendments presented in Attachment 1, and as described in this memo.

RULES PROPOSED:

860-039-0005, 860-039-0015, 860-039-0020, 860-039-0025, 860-039-0030, 860-039-0035, 860-039-0040, 860-039-0045, 860-039-0050, 860-039-0055, 860-039-0060, 860-039-0065

AMEND: 860-039-0005

RULE TITLE: Scope and Applicability of Net Metering Facility Rules

RULE SUMMARY: These rule changes update definitions to current standards and make other housekeeping standards.

RULE TEXT:

(1) OAR 860-039-0010 through 860-039-0080 (the "net metering rules") establish rules governing net metering facilities interconnecting to a public utility as required under ORS 757.300. Net metering is available to a customer-generator only as provided in these rules. These rules do not apply to a public utility that meets the requirements of ORS 757.300(9).

(2) Upon request or its own motion, the Commission may waive any of the division 039 rule for good cause shown. A request for waiver must be made in writing, unless otherwise allowed by the Commission.

(a) A public utility and net metering applicant may mutually agree to reasonable extensions to the required times for notices and submissions of information set forth in these rules for the purpose of allowing efficient and complete review of a net metering application.

(b) If a public utility unilaterally seeks waiver of the timelines set forth in these rules, the Commission must consider the number of pending applications for interconnection review and the type of applications, including review level and facility size.

(3) As used in OAR 860-039-0010 through 860-039-0080:

(a) "ANSI C12.1 standards" means the standards prescribed by the 2022 edition of the American National Standards Institute, Committee C12.1 (ANSI C12.1), entitled "American National Standard for Electric Meters - Code for Electricity Metering," approved by the C12.1 Accredited Standard Committee on June 9, 2022.

(b) "Applicant" means a person who has filed an application to interconnect a net metering facility to an electric distribution system.

(c) "Contiguous" means a single area of land that is considered to be contiguous even if there is an intervening public or railroad right of way, provided that rights of way land on which municipal infrastructure facilities exist (such as street lighting, sewerage transmission, and roadway controls) are not considered contiguous.

(d) "Customer-generator" means the person who is the user of a net metering facility and who has applied for and been accepted to receive electricity service at a premises from the serving public utility.

- (e) "Distribution system" means that portion of an electric system which delivers electricity from transformation points on the transmission system to points of connection at a customer's premises.
- (f) "Equipment package" means a group of components connecting an electric generator with an electric distribution system, and includes all interface equipment including switchgear, inverters, or other interface devices. An equipment package may include an integrated generator or electric production source.
- (g) "Export capacity" means the amount of power that can be transferred from the small generator facility to the distribution system. Export capacity is either the nameplate rating, or a lower amount if limited using an acceptable means identified in OAR 860-082-0033.
- (h) "Fault current" means electrical current that flows through a circuit and is produced by an electrical fault, such as to ground, double-phase to ground, three-phase to ground, phase-to-phase, and three-phase.
- (i) "Generation capacity" means the nameplate capacity of the power generating device(s) in alternating current (AC). Generation capacity does not include the effects caused by inefficiencies of power conversion or plant parasitic loads.
- (j) "Good utility practice" means a practice, method, policy, or action engaged in or accepted by a significant portion of the electric industry in a region, which a reasonable utility official would expect, in light of the facts reasonably discernable at the time, to accomplish the desired result reliably, safely and expeditiously.
- (k) "IEEE 1547" means the standards published in the 2018 edition of the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547, titled "IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces," approved by the IEEE SA Standards Board on February 15, 2018
- (l) "IEEE 1547.1" means the standards published in the 2020 edition of the IEEE Standard 1547.1, titled "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems and Associated Interfaces" and approved by the IEEE SA Standards Board on March 5, 2020.
- (m) "Impact study" means an engineering analysis of the probable impact of a net metering facility on the safety and reliability of the public utility's electric distribution system.
- (n) "Interconnection agreement" means an agreement between a customer-generator and a public utility, which governs the connection of the net metering facility to the electric distribution system, as well as the ongoing operation of the net metering facility after it is connected to the system. An interconnection agreement will follow the standard form agreement developed by the public utility and filed with the Commission.
- (o) "Interconnection facilities study" means a study conducted by a utility for the customer-generator

that determines the additional or upgraded distribution system facilities, the cost of those facilities, and the time schedule required to interconnect the net metering facility to the utility's distribution system.

(p) "Nationally recognized testing laboratory" or "NRTL" means a qualified private organization that performs independent safety testing and product certification. Each NRTL must meet the requirements set forth by the United States Occupational Safety and Health Administration.

(q) "Net metering facility" means a net metering facility as defined in ORS 757.300(1)(d).

(r) "Non-residential customer" means a retail electricity consumer that is not a residential customer, except "non-residential customer" does not include a customer who would be a residential customer but for the residency provisions of subsection (v) of this rule.

(s) "Point of common coupling" means the point beyond the customer-generator's meter where the customer-generator facility connects with the electric distribution system.

(t) "Public utility" has the meaning set forth in ORS 757.005 and is limited to a public utility that provides electric service.

(u) "Reference point of applicability" (RPA) means a location proximate to the generation where the interconnection and interoperability performance requirements, as specified by IEEE 1547, apply.

(v) "Residential customer" means a retail electricity consumer that resides at a dwelling primarily used for residential purposes. "Residential customer" does not include retail electricity customers in a dwelling typically used for residency periods of less than 30 days, including hotels, motels, camps, lodges, and clubs. "Dwelling" includes, but is not limited to, single-family dwellings, separately metered apartments, adult foster homes, manufactured dwellings, and floating homes.

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

(x) "Written notice" means a required notice sent by the utility via electronic mail if the customer-generator has provided an electronic mail address. If the customer-generator has not provided an electronic mail address or has requested in writing to be notified by United States mail, or if the utility elects to provide notice by United States mail, then written notices from the utility must be sent via First Class United States mail to the notification address provided by the customer-generator. The utility is deemed to have fulfilled its duty to respond under these rules on the day it sends the customer-generator notice via electronic mail or deposits such notice in First Class mail. The customer-generator is responsible for informing the utility of any changes to its notification address.

AMEND: 860-039-0015

RULE TITLE: Installation, Operation, Maintenance, and Testing of Net Metering Facilities

RULE SUMMARY: The changes to this rule clarify requirements and update the references to the net-metering facility compliance standards.

RULE TEXT:

- (1) Except for customer-generators established as net metering customers prior to the effective date of this rule, a customer-generator of a public utility must install, operate and maintain a net metering facility in compliance with IEEE 1547 and IEEE 1547.1.

- (2) Except for customer-generators established as net metering customers prior to the effective date of this rule, a customer-generator of a public utility must install and maintain a manual disconnect switch that will disconnect the net metering facility from the public utility's system. The disconnect switch must be a lockable, load-break switch that plainly indicates whether it is in the open or closed position. The disconnect switch must be readily accessible to the public utility at all times and located within 10 feet of the public utility's meter.
 - (a) For customer services of 600 volts or less, a public utility may not require a disconnect switch for a net metering facility that is inverter-based with a maximum rating as shown below.
 - (A) Service type: 240 Volts, Single-phase, 3 Wire — Maximum size 7.2 kW AC.
 - (B) Service type: 120/208 Volts, 3-Phase, 4 Wire — Maximum size 10.5 kW AC.
 - (C) Service type: 120/240 Volts, 3-Phase 4 Wire — Maximum size 12.5 kW AC.
 - (D) Service type: 277/480, 3-Phase, 4 Wire — Maximum size 25.0 kW AC.
 - (E) For other service types, the net metering facility must not impact the customer-generator's service conductors by more than 30 amperes.
 - (b) The disconnect switch may be located more than 10 feet from the public utility meter if permanent instructions are posted at the meter indicating the precise location of the disconnect switch. The public utility must approve the location of the disconnect switch prior to the installation of the net metering facility.
 - (3) The customer-generator's electric service may be disconnected by the public utility entirely if the net metering facility must be physically disconnected for any reason.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0020

RULE TITLE: Net Metering Facility Requirements

RULE SUMMARY: The rule changes update references to current standards and make housekeeping changes.

RULE TEXT:

(1) To qualify for the Tier1 and the Tier 2 interconnection review procedures set forth below, a net metering facility must be certified as complying with the following standards, as applicable:

(a) IEEE 1547 standards; and

(b) UL 1741, Third Edition, Supplement SB(2021).

(2) An equipment package will be considered certified for interconnected operation if it has been submitted by a manufacturer to a NRTL and has been tested and listed by the laboratory for continuous interactive operation with an electric distribution system in compliance with the applicable codes and standards listed in section (1) of this rule.

(3) If the equipment package has been tested and listed in accordance with this section as an integrated package, which includes a generator or other electric source, the equipment package will be deemed certified, and the public utility will not require further design review, testing, or additional equipment.

(4) If the equipment package includes only the interface components (switchgear, inverters, or other interface devices), an interconnection applicant must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and consistent with the testing and listing specified for the package. If the generator or electric source being utilized with the equipment package is consistent with the testing and listing performed by the NRTL, the equipment package will be deemed certified, and the public utility will not require further design review, testing, or additional equipment.

(5) A net metering facility must be equipped with metering equipment that can measure the flow of electricity in both directions, comply with ANSI C12.1 standards and OAR 860-023-0015. The public utility will install the required metering equipment at the utility's expense.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0025

RULE TITLE: Application for Net Metering Interconnection

RULE SUMMARY: The rule changes clarify the application process and make housekeeping and reference updates.

RULE TEXT:

(1) An application for interconnection review will be submitted on a standard form, available from the public utility and posted on the public utility's website. The application form will require the following types of information:

(a) The name of the applicant and the public utility involved;

(b) The type and specifications of the net metering facility;

(c) The tier of interconnection review sought; e.g., Tier 1, Tier 2 or Tier 4;

(d) The contractor who will install the net metering facility;

(e) Equipment certifications;

(f) The anticipated date the net metering facility will be operational; and

(g) Other information that the utility deems is necessary to determine compliance with these net metering rules.

(2) Within three business days after receiving an application for Tier 1 or Tier 2 interconnection review, the public utility will provide written or electronic mail notice to the applicant that it received the application and whether the application is complete. An application for interconnection is deemed complete when the public utility receives the information required by this rule. If the application is incomplete, the written notice will include a list of all of the information needed to complete the application. The applicant must provide the listed information within 10 business days of receipt of the list or the application is deemed withdrawn.

(3) An applicant will retain its original queue position for an interconnection request if the applicant resubmits its application at a higher tier of review within 30 business days of a utility's denial of the application at a lower tier of review.

(4) Each public utility will designate an employee or office from which an applicant can obtain basic application forms and information through an informal process. On request, the public utility must provide all relevant forms, documents, and technical requirements for submittal of a complete application for interconnection review under these net metering rules, as well as specific information necessary to contact the public utility representatives assigned to review the application.

(5) On request, the public utility must meet with an applicant who qualifies for Tier 2 or Tier 4 interconnection review to assist them in preparing the application.

- (6) A public utility will not be responsible for the cost of determining the rating of equipment owned by a customer-generator or of equipment owned by other local customers.
- (7) At the time of application, an applicant may choose to simultaneously submit an executed public utility's standard form interconnection agreement.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0030

RULE TITLE: Tier 1 Net Metering Interconnection Review

RULE SUMMARY: The rule changes update screening conditions of the interconnection application review and align with requirements in Division 82 rules.

RULE TEXT:

(1) A net metering facility meeting the following criteria is eligible for Tier1 interconnection review:

(a) The facility is inverter-based; and

(b) The facility has a generation capacity of 50 kilowatts or less and an export capacity of 25 kilowatts or less.

(2) The public utility must approve a complete application for interconnection under Tier 1 net metering interconnection review procedure if the net metering facility meets the eligibility requirements in section (1) of this rule and the facility meets the Tier 1 interconnection screening criteria set forth at OAR 860-082-0045(2)(a)-(f).

(3) Within 10 business days after the public utility notifies a Tier1 applicant that the application is complete, the public utility must notify the applicant whether the facility meets the Tier 1 screening criteria.

(4) If a public utility does not notify a Tier 1 applicant in writing whether the interconnection application passes the Tier 1 screening criteria within 20 business days after the receipt of a complete application, the interconnection application will be deemed approved. Interconnections approved under this section remain subject to sections (7) and (8) below.

(5) Approval despite screen failure.

(a) Despite the failure of one or more screening criteria, the public utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability.

(b) If the public utility determines that the customer-generator can be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.

(6) Process after screen failure. If the public utility cannot determine that the customer-generator may nevertheless be interconnected consistent with safety, reliability, and power quality standards, at the time the public utility notifies the applicant of the Tier 1 review results the public utility shall provide the applicant with:

(a) The screen results, including specific information on the reason(s) for failure in writing using a

standard format approved by the Commission; and

(b) An executable Supplemental Review Agreement.

(c) In addition, the public utility shall allow the applicant to select one of the following, at the applicant's option:

(A) Request an applicant options meeting;

(B) Undergo supplemental review in accordance with OAR 860-082-0063;

(C) Continue evaluating the application under Tier 4.

The applicant must notify the public utility of its selection within 10 business days, or the application will be deemed withdrawn.

(7) Applicant options meeting. If the applicant requests an applicant options meeting, the public utility shall offer to convene a meeting at a mutually agreeable time within 15 business days of the applicant's request. At the applicant options meeting, the public utility shall provide the applicant the opportunity to review the screen analysis and related results, to designate a different RPA, to review possible customers-generator modifications, and to discuss what further steps are needed to permit the net metering facility to connect safely and reliably.

(8) Within three business days after sending the notice to an applicant that the proposed interconnection application meets the Tier 1 interconnection requirements, a public utility must notify the applicant whether:

(a) An inspection of the net metering facility for compliance with the net metering rules is required prior to the operation of the facility; and

(b) An interconnection agreement is required for the net metering facilities. If required, the public utility must also execute and send to the applicant a Tier 1 interconnection agreement, unless the applicant has already submitted such an agreement with its application for interconnection.

(9) On receipt of any required executed interconnection agreement from the applicant and satisfactory completion of any required inspection, the public utility will approve the interconnection, conditioned on compliance with all applicable building codes.

(10) A customer-generator will notify the public utility of the anticipated start date for operation of the net metering facility at least five business days prior to starting operation, either through the submittal of the interconnection agreement or in a separate notice. If the public utility requires an inspection of the net metering facility, the applicant will not begin operating the facility until satisfactory completion of the inspection.

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0035

RULE TITLE: Tier 2 Net Metering Interconnection Review

RULE SUMMARY: These rule changes align the requirements here with the Division 82 requirements, as well as provide more clarity to the Tier 2 Net Metering Interconnection Review Process and update standards referenced.

RULE TEXT:

(1) A public utility must apply the following Tier 2 interconnection review procedure for an application to interconnect a net metering facility that meets the following criteria:

(a) The facility has a capacity of two megawatts or less; and

(b) The facility does not qualify for Tier 1 interconnection review procedures.

(2) The public utility must approve an application for interconnection under the Tier 2 interconnection review if the net metering facility meets the eligibility requirements in section (1) of this rule and the facility meets the Tier 2 interconnection screening criteria set forth at OAR 860-082-0050(2)(a)–(1).

(3) The public utility must perform an initial review of the proposed interconnection to determine whether the interconnection meets the applicable criteria. During this initial review, the public utility may, at its own expense, conduct any studies or tests it deems necessary to evaluate the proposed interconnection. Within 15 business days after notifying a Tier 2 applicant that the application is complete, the public utility must provide the applicant written notice of one of the following determinations:

(a) The net metering facility meets the applicable requirements and that interconnection will be approved following any required inspection of the facility and fully executed interconnection agreement. Within three business days after this notice, the public utility will provide the applicant with an executable interconnection agreement;

(b) The net metering facility failed to meet one or more of the applicable requirements, but the public utility determined that the net metering facility may nevertheless be interconnected consistent with safety, reliability, and power quality. In this case, the public utility will notify the applicant that the interconnection will be approved following any required inspection of the facility and fully executed interconnection agreement. Within five business days after this notice, the public utility will provide the applicant with an executable interconnection agreement; or

(c) The net metering facility failed to meet one or more of the applicable requirements, and that additional review would not enable the public utility to determine that the net metering facility could be interconnected consistent with safety, reliability, and power quality. In such a case, the public utility will notify the applicant that the interconnection application failed the screening criteria, including a list of additional information, or modifications to the net metering facility, or both, which would be required in order to obtain an approval under Tier 2 interconnection procedures.

(4) Process after screen failure. If the public utility cannot determine that the customer-generator may nevertheless be interconnected consistent with safety and reliability standards, at the time the public

utility notifies the applicant of the Tier 2 review results the public utility shall provide the applicant with:

(a) The screen results including specific information on the reason(s) for failure in writing using a standard format approved by the Commission, and

(b) An executable Supplemental Review Agreement.

(c) In addition, the public utility shall allow the applicant to select one of the following, at the applicant's option:

(A) Request an applicant options meeting;

(B) Undergo supplemental review in accordance with OAR 860-082-0063; or

(C) Continue evaluating the application under Tier 4.

The applicant must notify the public utility of its selection within 10 business days, or the application will be deemed withdrawn.

(5) Approval despite screen failure.

(a) Despite the failure of one or more screening criteria, the public utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability.

(b) If the public utility determines that the customer-generator can be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.

(6) Applicant options meeting. If the applicant requests an applicant options meeting, the public utility shall offer to convene a meeting at a mutually agreeable time within 15 business days of the applicant's request. At the applicant options meeting the public utility shall provide the applicant the opportunity to review the screen analysis and related results, to designate a different RPA, to review possible customer-generator modifications, and to discuss what further steps are needed to permit the net metering facility to connect safely and reliably.

(7) An applicant that receives an interconnection agreement under subsection (3)(a) or (3)(b) of this rule must:

(a) Execute the agreement and return it to the public utility at least 10 business days prior to starting operation of the net metering facility (unless the public utility does not so require); and

- (b) Indicate to the public utility the anticipated start date for operation of the net metering facility.
- (8) The public utility may require a public utility inspection of a net metering facility for compliance with these net metering rules prior to operation and may require and arrange for witness of commissioning tests as set forth in IEEE 1547 and IEEE 1547.1. The public utility must schedule any inspections or tests under this section promptly and within a reasonable time after submittal of the application. The applicant may not begin operating the net metering facility until after the inspection and testing is completed.
- (9) Approval of interconnected operation of any Tier 2 net metering facility must be conditioned on all of the following occurring:
- (a) Approval of the interconnection by the electrical code official with jurisdiction over the interconnection;
 - (b) Successful completion of any public utility inspection or witnessing, or both, of commissioning tests requested by the public utility; and
 - (c) Passing of the planned start date provided by the applicant.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0040

RULE TITLE: Tier 4 Net Metering Interconnection Review

RULE SUMMARY: The changes to this rule align the requirements with those in Division 82 and include updating references to procedures and clarifying processes for a Tier 4 Interconnection Review.

RULE TEXT:

- (1) The public utility must apply the Tier 4 review procedure for an application to interconnect a net metering facility that meets the following criteria:
 - (a) The facility has a capacity of two megawatts or less; and
 - (b) The facility does not qualify for or failed to receive approval in Tier 1 or Tier 2 interconnection review procedures.
- (2) Following receipt of a Tier 4 application and within three business days of a request from the applicant, the public utility must provide pertinent information to the applicant, such as the available fault current at the proposed interconnection location, the existing peak loading on the lines in the general vicinity of the net metering facility, and the configuration of the distribution lines at the proposed point of common coupling.
- (3) Within seven business days after receiving a complete application for Tier 4 interconnection review, the public utility must provide an impact study agreement to the applicant, which will include a non-binding, good faith cost estimate for an impact study to be performed by the public utility. The impact study will be conducted in accordance with good utility practice and must:
 - (a) Detail the impacts to the electric distribution system that would result if the net metering facility were interconnected without modifications to either the net metering facility or to the electric distribution system;
 - (b) Identify any modifications to the public utility's electric distribution system that would be necessary to accommodate the proposed interconnection; and
 - (c) Focus on power flows and utility protective devices, including control requirements; and
 - (d) Include the following elements, as applicable:
 - (A) A load flow study;
 - (B) A short-circuit study;
 - (C) A circuit protection and coordination study;
 - (D) The impact on the operation of the electric distribution system;
 - (E) A stability study, along with the conditions that would justify including this element in the impact

study;

(F) A voltage collapse study, along with the conditions that would justify including this element in the impact study; and

(G) Additional elements, if approved in writing by Commission staff prior to the impact study.

(4) After the applicant executes the impact study agreement and pays the public utility the amount of the good faith estimate, the public utility will complete the impact study and will notify the applicant within 30 calendar days of one of the following results:

(a) Only minor modifications to the public utility's electric distribution system are necessary to accommodate interconnection. In such a case, the public utility will send the applicant an interconnection agreement that details the scope of the necessary modifications and a non-binding, good faith estimate of their cost; or

(b) Substantial modifications to the public utility's electric distribution system are necessary to accommodate the proposed interconnection. In such a case, the public utility must provide a non-binding, good faith estimate of the cost of the modifications, which must be accurate to within plus or minus 25 percent. In addition, the public utility must offer to conduct, at the applicant's expense, an interconnection facilities study that must identify the types and cost of equipment needed to safely interconnect the applicant's net metering facility.

(5) If the proposed interconnection may affect electric transmission or delivery systems other than those controlled by the public utility, operators of those other systems may require additional studies to determine the potential impact of the interconnection on those systems. If such additional studies are required, the public utility will coordinate the studies but will not be responsible for their timing. The applicant will be responsible for the costs of any such additional studies required by another affected system. Such studies will be conducted only after the applicant has provided written authorization.

(6) If an applicant requests a facilities study under subsection (4)(b), the public utility must provide an interconnection facilities study agreement. The interconnection facilities study agreement must describe the work to be undertaken in the interconnection facilities study and must include a non-binding, good faith estimate of the cost to the applicant for completion of the study. Upon the execution by the applicant of the interconnection facilities study agreement, the public utility will conduct an interconnection facilities study to identify the facilities necessary to safely interconnect the net metering facility with the public utility's electric distribution system, and to propose a non-binding, good faith estimate of the cost of those facilities and the time required to build and install those facilities.

(7) Upon completion of an interconnection facilities study, the public utility must provide the applicant with the results of the study and an executable interconnection agreement. The agreement must list the conditions and facilities necessary for the net metering facility to safely interconnect with the public utility's electric distribution system, and must include a non-binding, good faith estimate of the cost of those facilities and the estimated time required to build and install those facilities.

(8) If the applicant wishes to interconnect, it must execute the interconnection agreement and return it to the public utility at least 10 business days prior to starting operation of the net metering facility (unless the public utility does not so require), pay a deposit of not more than 50 percent of the estimated cost of the facilities identified in the interconnection facilities study, complete installation of the net metering facility, and agree to pay the public utility the actual installed cost of the facilities needed to interconnect as identified in the interconnection facilities study.

(9) Within 15 business days after notice from the applicant that the net metering facility has been installed, the public utility will inspect the net metering facility and will arrange to witness any commissioning tests required under IEEE standards. The public utility and the applicant will select a date by mutual agreement for the public utility to witness commissioning tests.

(10) If the net metering facility satisfactorily passes required commissioning tests, if any, the public utility must notify the applicant in writing, within three business days after the tests, of one of the following:

- (a) The interconnection is approved and the net metering facility may begin operation; or
- (b) The interconnection facilities study identified necessary construction that has not been completed, the date upon which the construction will be completed and the date when the net metering facility may begin operation.

(11) If the commissioning tests are not satisfactory, the applicant will repair or replace the unsatisfactory equipment and reschedule a commissioning test.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0045

RULE TITLE: Net Metering Interconnection Fees and Costs

RULE SUMMARY: The rules changes update the naming for the interconnection review processes.

RULE TEXT:

(1) A public utility may not charge an application, or other fee, to an applicant that requests Tier1 interconnection review. However, if an application for Tier 1 interconnection review is denied, and the applicant resubmits the application under another review procedure, the public utility may impose a fee for the resubmitted application, consistent with this section.

(2) For a Tier 2 interconnection review, the public utility may charge fees of up to \$50.00 plus \$1.00 per kilowatt of the net metering facility's capacity, plus the reasonable cost of any required minor modifications to the electric distribution system or additional review. Costs for such minor modifications or additional review will be based on the public utility's non-binding, good faith estimates and the ultimate actual installed costs. Costs for engineering work done as part of any additional review will not exceed \$100.00 per hour. A public utility may adjust the \$100.00 hourly rate once in January of each year to account for inflation and deflation as measured by the Consumer Price Index.

(3) For a Tier 4 interconnection review, the public utility may charge fees of up to \$100.00 plus \$2.00 per kilowatt of the net metering facility's capacity, as well as charges for actual time spent on any required impact or facilities studies. Costs for engineering work done as part of an impact study or interconnection facilities study will not exceed \$100.00 per hour. A public utility may adjust the \$100.00 hourly rate once in January of each year to account for inflation and deflation as measured by the Consumer Price Index. If the public utility must install facilities in order to accommodate the interconnection of the net metering facility, the cost of such facilities will be the responsibility of the applicant.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0050

RULE TITLE: Requirements After Approval of a Net Metering Interconnection

RULE SUMMARY: The rule changes update references to current processes and standards.

RULE TEXT:

- (1) A public utility may not require an applicant whose facility meets the criteria for interconnection approval under the Tier 1 or Tier 2 interconnection review procedure to perform or pay for additional tests, except if agreed to by the applicant.
- (2) A public utility may not charge any fee or other charge for connecting to the public utility's distribution system or for operation of a net metering facility for the purposes of net metering, except for the fees provided for under these net metering rules.
- (3) Once a net metering interconnection has been approved under these net metering rules, the public utility may not require a customer-generator to test or perform maintenance on its facility except for the following:
 - (a) An annual test in which the net metering facility is disconnected from the public utility's equipment to ensure that the inverter stops delivering power to the grid;
 - (b) Any manufacturer-recommended testing or maintenance;
 - (c) Any post-installation testing necessary to ensure compliance with IEEE 1547 or to ensure safety; and
 - (d) The customer-generator replaces a major equipment component that is different from the originally installed model.
- (4) When an approved net metering facility undergoes maintenance or testing in accordance with the requirements of these net metering rules, the customer-generator must retain written records for seven years documenting the maintenance and the results of testing.
- (5) A public utility has the right to inspect a customer-generator's facility after interconnection approval is granted, at reasonable hours and with reasonable prior notice to the customer-generator. If the public utility discovers that the net metering facility is not in compliance with the requirements of these net metering rules, the public utility may require the customer-generator to disconnect the net metering facility until compliance is achieved.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0055

RULE TITLE: Net Metering Billing

RULE SUMMARY: No changes to this rule; it should not be included in the Notice.

RULE TEXT:

(1) Each monthly billing period, the public utility will charge the customer-generator the minimum monthly charge and all applicable charges for the net electricity that the public utility supplied. Subject to sections (2) and (3) of this rule, if in a monthly billing period a customer-generator supplies to the public utility more electricity than the public utility supplies the customer-generator, the public utility will apply the excess kilowatt-hours as a cumulative credit to the customer-generator's next monthly bill. The credit for the excess kilowatt-hours will be applied at the full retail rate for each rate component on the bill that uses kilowatt-hours as the billing determinant.

(2) Unless the public utility and the customer-generator otherwise agree, the annual billing cycle will end at the end of the March billing month of each year. Should the public utility and a customer-generator reach an agreement for a billing cycle ending other than at the end of the March billing month, the public utility must inform the Commission in writing of the alternative billing period within 30 calendar days of the agreement's execution.

(3) The alternative billing period must be for a period of twelve months or less.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0060

RULE TITLE: Excess Energy from Net Metering Facilities

RULE SUMMARY: There are no changes to this rule and it should not be included in the notice.

(Diane's Summary)

RULE TEXT:

(1) Any unused kilowatt-hour credit accumulated by a customer-generator of a public utility at the conclusion of the annual billing cycle will be transferred, in a manner approved by the Commission, to customers enrolled in the public utility's low-income assistance programs. The public utility will value any unused kilowatt-hour credit at the applicable average annual avoided cost tariff rate.

(2) The customer-generator may not elect to receive a credit or payment for any unused credit accumulated at the conclusion of the annual billing cycle.

(3) The public utility will report in writing to the Commission by July 1 each year the unused kilowatt-hour credits and the dollar amount transferred to the low-income assistance program in the previous billing year.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

AMEND: 860-039-0065

RULE TITLE: Aggregation of Meters for Net Metering

RULE SUMMARY: The change to this rule is a housekeeping correction in section (3). No other changes.

RULE TEXT:

- (1) For the purpose of measuring electricity usage under the net metering program, a public utility must, upon request from a customer-generator, aggregate for billing purposes the meter that is physically attached to the net metering facility ("designated meter") with one or more meters ("aggregated meter") in the manner set out in this rule. This rule is mandatory upon the public utility only when:
 - (a) The aggregated meters are located on the customer-generator's premises or property that is contiguous to such premises;
 - (b) The electricity recorded by the designated meter and any aggregated meters is for the customer-generator's requirements, and;
 - (c) The designated meter and the aggregated meters are served by the same primary feeder at the time of application.
- (2) When a customer-generator aggregates one or more meters that are subject to a different rate schedule than the designated meter, the facilities capacity limit in OAR 860-039-0010 is determined by the rate applicable to the designated meter.
- (3) A customer-generator must give at least 60 days' notice to the utility to request that additional meters be included in meter aggregation. The specific meters must be identified at the time of such request. In the event that more than one additional meter is identified, the customer-generator must designate the rank order for the aggregated meters to which net metering credits are to be applied and must rank aggregated meters subject to the same rate schedule as the designated meter above any other meters. At least 60 days in advance of the beginning of the next annual billing period, a customer-generator may amend the rank order of the aggregated meters, subject to the requirements of this rule.
- (4) The aggregation of meters will apply only to charges that use kilowatt-hours as the billing determinant. All other charges applicable to each meter account will be billed to the customer-generator.
- (5) The utility will first apply the kWh credit to the charges for the designated meter and then to the charges for the aggregated meters in the rank order specified by the customer-generator. If in a monthly billing period the net metering facility supplies more electricity to the public utility than the energy usage recorded by the customer-generator's designated and aggregated meters, the utility will apply credits to the next monthly bill for the excess kilowatt-hours first to the designated meter, then to aggregated meters in the rank order specified by the customer-generator. Public utilities subject to ORS 757.300(2) through (8) must specify in tariffs how the kWh credits will be applied when rate schedules have non-uniform kWh charges.

(6) With the Commission's prior approval, a public utility may charge the customer-generator requesting to aggregate meters a reasonable fee to cover the administrative costs of this provision pursuant to a tariff approved by the Commission.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 757.300

RULES PROPOSED:

860-082-0005, 860-082-0015, 860-082-0020, 860-082-0025, 860-082-0030, 860-082-0033, 860-082-0035, 860-082-0040, 860-082-0045, 860-082-0050, 860-082-0055, 860-082-0060, 860-082-0063, 860-082-0065, 860-082-0070

AMEND: 860-082-0005

RULE TITLE: Scope and Applicability

RULE SUMMARY: The rule changes clarify applicability of this division of rules.

RULE TEXT:

- (1) OAR 860-082-0005 through 860-082-0085 (the “small generator interconnection rules”) govern the interconnection of a small generator facility with a nameplate rating of 10 megawatts or less to a public utility’s transmission or distribution system. These rules do not apply if the interconnection between the small generator facility and the public utility is subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC).
- (2) Except as specified in OAR 860-082-0025(1)(b), the small generator interconnection rules do not apply retroactively to a small generator facility that was interconnected to a public utility’s transmission or distribution system prior to the effective date of the small generator interconnection rules (an “existing small generator facility”). These rules become applicable to an existing small generator facility at the expiration of the agreement governing the terms of the interconnection of the existing small generator facility to the interconnected public utility’s transmission or distribution system. If an existing agreement does not have an expiration date, then the small generator interconnection rules become applicable to the existing small generator facility 10 years after the effective date of the rules. An existing small generator facility must submit an application under OAR 860-082-0025(1)(e) to the interconnected public utility no later than 60 business days before the date that the small generator interconnection rules become applicable.
- (3) Except where explicitly noted in OAR 860, division 039, the small generator interconnection rules do not apply to the interconnection of a net metering facility, which is governed by division 039.
- (4) A small generator facility that qualifies as a “small power production facility” under OAR 860-029-0010(25) must also comply with the rules in OAR chapter 860, division 029. If there is a conflict between the small generator interconnection rules and the rules in OAR chapter 860, division 029, then the small generator interconnection rules control.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0015

RULE TITLE: Definitions

RULE SUMMARY: The rule changes incorporate new terms and update definitions to current processes and standards.

RULE TEXT:

As used in 860-082-0005 through 860-082-0085:

(1) “Adverse system impact” means a negative effect caused by the interconnection of a small generator facility that may compromise the safety or reliability of a transmission or distribution system.

(2) “Affected system” means a transmission or distribution system, not owned or operated by the interconnecting public utility, which may experience an adverse system impact from the interconnection of a small generator facility.

(3) “Aggregated export capacity” means the total combined export capacity of:

(a) A proposed small generator facility;

(b) Existing small generator facilities, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate rating greater than 10 megawatts; and

(c) Small generator facilities, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate rating greater than 10 megawatts that have pending completed applications with higher queue positions than the proposed small generator facility.

(4) “Aggregated nameplate rating” means the total combined nameplate rating of:

(a) A proposed small generator facility;

(b) Existing small generator facilities, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate rating greater than 10 megawatts; and

(c) Small generator facilities, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate rating greater than 10 megawatts that have pending completed applications with higher queue positions than the proposed small generator facility.

(5) “Applicant” means a person who has submitted an application to interconnect a small generator facility to a public utility’s transmission or distribution system.

(6) “Application” means a written request to interconnect a small generator facility with a public utility’s transmission or distribution system, which must follow the standard form developed by the public utility and approved by the Commission.

(7) “Area network” means a type of distribution system served by multiple transformers

interconnected in an electrical network circuit in order to provide high reliability of service.

(8) “Certificate of completion” means a certificate signed by an applicant and an interconnecting public utility attesting that a small generator facility is complete, meets the applicable requirements of the small generator interconnection rules, has passed all applicable federal, state, and local inspection requirements, and is certified as physically ready for operation. A certificate of completion includes the “as built” specifications and initial settings for the small generator facility and its associated interconnection equipment.

(9) “Distribution system” means the portion of an electric system that delivers electricity from transformation points on the transmission system to points of connection on a customer’s premises.

(10) “Energy storage system” means a mechanical, electrical, or electrochemical means to store and release electrical energy, and its associated interconnection and control equipment. For the purposes of these rules, an energy storage system can be considered part of a small generator facility or a small generator facility in whole that operates in parallel with the distribution system.

(11) “Export capacity” means the amount of power that can be transferred from the small generator facility to the distribution system. Export capacity is either the nameplate rating, or a lower amount if limited using an acceptable means identified in OAR 860-082-0033.

(12) “Fault current” means an electrical current that flows through a circuit during a fault condition. A fault condition occurs when one or more electrical conductors contact ground or each other. Types of faults include phase to ground, double-phase to ground, three-phase to ground, phase to phase, and three-phase.

(13) “Field-tested equipment” means interconnection equipment that is identical to equipment that was approved by the interconnecting public utility for a different small generator facility interconnection and successfully completed a witness test under the requirements included in the current version of the public utility’s interconnection requirements handbook before the date of the submission of the current application.

(14) “Host load” means electrical power, less the small generator facility auxiliary load, consumed by the customer at the location where the small generator facility is connected.

(15) “IEEE 1547” means the standards published in the 2018 edition of the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547, titled “IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces” and approved by the IEEE SA Standards Board on February 15, 2018.

(16) “IEEE 1547.1” means the standards published in the 2020 edition of the IEEE Standard 1547.1, titled “IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems and Associated Interfaces” and approved by the IEEE SA Standards Board on March 5, 2020.

(17) “Inadvertent export” means the unscheduled export of active power from a small generator

facility, exceeding a specified magnitude and for a limited duration, generally due to fluctuations in load-following behavior.

(18) “Interconnection agreement” means a contract between an applicant or interconnection customer and an interconnecting public utility that governs the interconnection of a small generator facility to the public utility’s transmission or distribution system and the ongoing operation of the small generator facility after it is interconnected. An interconnection agreement will follow the standard form agreement developed by the public utility and filed with the Commission.

(19) “Interconnection customer” means a person with one or more small generator facilities interconnected to a public utility’s transmission or distribution system.

(20) “Interconnection equipment” means a group of components or an integrated system provided by an interconnection customer or applicant to connect a small generator facility to a public utility’s transmission or distribution system.

(21) “Interconnection facilities” means the facilities and equipment required by a public utility to accommodate the interconnection of a small generator facility to the public utility’s transmission or distribution system and used exclusively for that interconnection. Interconnection facilities do not include system upgrades.

(22) "Interconnection facilities study" means a study conducted by a utility for the customer-generator that determines the additional or upgraded distribution system facilities, the cost of those facilities, and the time schedule required to interconnect the small generator facility to the public utility’s distribution system.

(23) “Interconnection service” means service provided by an interconnecting public utility to an interconnection customer.

(24) “Lab-tested equipment” means interconnection equipment that has been designed to comply with IEEE 1547, tested in accordance with IEEE 1547.1, and certified and labeled as compliant with these IEEE standards at the point of manufacture by a nationally recognized testing lab. For interconnection equipment to be considered lab-tested equipment under these rules, the equipment must be used in a manner consistent with the certification.

(25) “Limited export” means the exporting capability of a small generator facility whose export capacity is limited by the use of any configuration or operating mode described in OAR 860-082-0033.

(26) “Line section” means that portion of a public utility’s transmission or distribution system that is connected to an interconnection customer and bounded by automatic sectionalizing devices or the end of a distribution line.

(27) “Minor equipment modification” means a change to a small generator facility or its associated interconnection equipment that:

(a) Includes a change or replacement of equipment that is a like-kind substitution in size, ratings,

impedances, efficiencies, or capabilities of the equipment specified in the original interconnection application. Minor variations that do not affect safety, performance, or interoperability are acceptable;

(b) Includes a replacement of existing inverters with new inverters that conform to standards in effect at the time of replacement;

(c) Includes a reduction in the nameplate rating and/or export capacity of the small generator facility of 10 percent or less; or

(d) For changes not specified in subsections (a) through (c) of this definition, the change must not, in the interconnecting public utility's reasonable opinion, have a material impact on the safety or reliability of the public utility's transmission or distribution system or an affected system.

(e) Applicants must inform the interconnecting public utility of minor equipment modifications, prior to making the change.

(28) "Nameplate rating" means the sum total of maximum rated power output of all of a small generator facility's constituent generating units and/or energy storage systems as identified on the manufacturer nameplate in Alternating Current (AC), regardless of whether it is limited by any approved means. For a generating unit that uses an inverter to change direct current energy supplied to an AC quantity, the nameplate rating will be the manufacturer's AC output rating for the inverter(s).

(29) "Nationally recognized testing laboratory" or "NRTL" means a qualified private organization that performs independent safety testing and product certification. Each NRTL must meet the requirements set forth by the United States Occupational Safety and Health Administration.

(30) "Net metering facility" has the meaning set forth in ORS 757.300(1)(d).

(31) "Non-export or non-exporting" means when the small generator facility is sized and designed and operated using any of the methods in OAR 860-082-0033, such that the output is used for host load only and no electrical energy (except for any inadvertent export) is transferred from the small generator facility to the distribution system.

(32) "Pending completed application" means an application for interconnection of a small generator facility, a net metering facility, or a FERC jurisdictional generator that an interconnecting public utility has deemed complete.

(33) "Person" includes individuals, joint ventures, partnerships, corporations and associations or their officers, employees, agents, lessees, assignees, trustees or receivers, as supplemented to include governmental entities.

(34) "Point of interconnection" means the point where a small generator facility is electrically connected to a public utility's transmission or distribution system. This term has the same meaning as "point of common coupling" as defined in IEEE 1547.

(35) "Power control system" means systems or devices which electronically limit or control steady

state currents to a programmable limit.

(36) “Primary line” means a distribution line with an operating voltage greater than 600 volts.

(37) “Public utility” has the meaning set forth in ORS 757.005 and is limited to a public utility that provides electric service.

(38) “Queue position” means the rank of a pending completed application, relative to all other pending completed applications, that is established based on the date and time that the interconnecting public utility receives the completed applications, including application fees.

(39) “Reference point of applicability” (RPA) means a location proximate to the generation where the interconnection and interoperability performance requirements, as specified by IEEE 1547, apply.

(40) “Relevant minimum load” means the lowest measured load coincident with the generating facility’s production. For solar-only facilities, this is the daytime minimum load (i.e., 10 a.m. to 4 p.m. for fixed panel systems and 8 a.m. to 6 p.m. for PV systems utilizing tracking systems).

(41) “Scoping meeting” means an initial meeting between representatives of an applicant and an interconnecting public utility that is conducted to discuss the RPA; to discuss alternative interconnection options; to exchange information, including any relevant transmission or distribution system data and earlier studies that would reasonably be expected to affect the interconnection options; to analyze such information; and to determine the potentially feasible points of interconnection.

(42) “Secondary line” means a service line with an operating voltage of 600 volts or less.

(43) “Small generator facility” means a facility that operates in parallel with the distribution system for the production of electrical energy that has a maximum installed instantaneous power production capacity of the completed Facility, expressed in MW (AC), and measured at the Point of Interconnection of 10 MW, when operated in compliance with the Generation Interconnection Agreement and consistent with the recommended power factor and operating parameters provided by the manufacturer of the generator, inverters, energy storage devices, or other equipment within the Facility affecting the Facility's capability to deliver useful electric energy to the grid at the Point of Interconnection.

(44) “Spot network” means a type of transmission or distribution system that uses two or more intertied transformers protected by network protectors to supply an electrical network circuit. A spot network may be used to supply power to a single customer or a small group of customers.

(45) “System upgrade” means an addition or modification to a public utility’s transmission or distribution system or to an affected system that is required to accommodate the interconnection of a small generator facility.

(46) “Transmission line” means any electric line operating at or above 50,000 volts.

(47) “Transmission system” means a public utility’s high voltage facilities and equipment used to

transport bulk power or to provide transmission service under the public utility's open access transmission tariff.

(48) "Witness test" means the on-site visual verification of the interconnection installation and commissioning as required in IEEE 1547. For interconnection equipment that does not meet the definition of lab-tested equipment, the witness test may, at the discretion of the public utility, also include a type test and small generator facility evaluation according to IEEE 1547 as applicable to the specific interconnection equipment used.

(49) "Written notice" means a required notice sent by the public utility via electronic mail if the customer-generator has provided a functioning electronic mail address. If the customer-generator has not provided a functioning electronic mail address or has requested in writing to be notified by United States mail, then written notices from the public utility must be sent via First Class United States mail to the notification address provided by the customer-generator. The public utility is deemed to have fulfilled its duty to respond under these rules on the day it sends the customer-generator notice via electronic mail or deposits such notice in First Class mail. The customer-generator is responsible for informing the public utility of any changes to its notification address.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0020

RULE TITLE: Pre-Application Process

RULE SUMMARY: The changes to this rule are housekeeping in nature.

RULE TEXT:

(1) Each public utility must designate an employee or office from which relevant information about the small generator interconnection process, the public utility's transmission or distribution system, and affected systems may be obtained through informal requests for a potential applicant proposing a small generator facility at a specific site. The public utility must post contact information for the employee or office on the public utility's website. The information provided by the public utility in response to a potential applicant's request must include relevant existing studies and other materials that may be used to understand the feasibility of interconnecting a small generator facility at a particular point on the public utility's transmission or distribution system. The public utility must comply with reasonable requests for access to or copies of such information, except to the extent that providing such materials would violate security requirements, confidentiality obligations to third parties, or be contrary to federal or state regulations. The public utility may require a person to sign a confidentiality agreement if required to protect confidential or proprietary information. For a potential small generator facility requiring Tier 4 review, and at the potential applicant's request, the public utility must meet with the potential applicant to exchange information. A public utility employee with relevant technical expertise must attend any such meeting.

(2) A person requesting information under section (1) must reimburse the public utility for the reasonable costs of gathering and copying the requested information.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0025

RULE TITLE: Applications to Interconnect a Small Generator Facility

RULE SUMMARY: The changes to this rule provide clarity to the application process.

RULE TEXT:

(1) A person may not interconnect a small generator facility to a public utility's transmission or distribution system without authorization from the public utility.

(a) A person proposing to interconnect a new small generator facility to a public utility's transmission or distribution system must submit an application to the public utility.

(b) A person with an existing interconnected small generator facility who proposes to make any change to the facility, other than a minor equipment modification, must submit an application to the public utility. This includes changes affecting the nameplate rating of the existing interconnected small generator facility or the output capacity authorized in the agreement governing the terms of the interconnection.

(c) An applicant with a pending completed application to interconnect a small generator facility must submit a new application if the applicant proposes to make any change to the small generator facility other than a minor equipment modification. This includes changes affecting the nameplate rating of the proposed small generator facility.

(A) The applicant relinquishes the queue position assigned to the pending completed application, and the public utility assigns a new queue position based on the date and time the public utility receives the new application.

(B) If the new application is submitted within 30 business days of the date of submission of the original application, then the public utility must apply the original application fee to the application fee required for the new application.

(d) A person with a pending completed application to interconnect a net metering facility or a FERC jurisdictional generator who proposes to change the facility to a small generator facility must submit a new application under the small generator interconnection rules.

(A) The applicant relinquishes the queue position assigned to the pending completed application, and the public utility assigns a new queue position based on the date and time that the interconnecting public utility receives the small generator interconnection application.

(B) If the small generator interconnection application is received within 30 business days of the date of submission of the original net metering or FERC jurisdictional generator interconnection application, then the public utility must apply the original application fee to the application fee required for the new application.

(e) An interconnection customer must submit an application to renew an existing small generator facility interconnection before the expiration of the interconnection agreement between the interconnection customer and the interconnected public utility. The application must be submitted no

later than 60 business days before the interconnection agreement's expiration date.

(A) A public utility may not unreasonably refuse to grant expedited review of an application to renew an existing small generator facility interconnection if there have been no changes to the small generator facility other than minor equipment modifications.

(B) A public utility may not require an existing small generator facility to undergo Tier 4 review if there have been no changes to the small generator facility other than minor equipment modifications and there have been no material changes to the portion of the public utility's transmission or distribution system affected by the interconnection of the small generator facility.

(C) A public utility may require the interconnection customer to pay for interconnection facilities, system upgrades, or changes to the small generator facility or its associated interconnection equipment that are necessary to bring the small generator facility interconnection into compliance with the small generator interconnection rules or IEEE 1547 or 1547.1.

(D) If the public utility has not completed its review of an application to renew and a new interconnection agreement is not signed before the expiration of the current interconnection agreement governing the interconnection of an existing small generator facility to a public utility's transmission or distribution system, then the current interconnection agreement remains in effect until the renewal process is completed and a new interconnection agreement is signed.

(2) All applications must be made using the appropriate application form and must follow the standard form applications developed by the public utility and approved by the Commission. The public utility must provide separate application forms for review under Tier 1 and for review under Tiers 2, 3, and 4. The Tier 1 application form must include an unexecuted interconnection agreement. The public utility must provide a copy of an application form to any person upon request and must post copies of the application forms on the public utility's website.

(a) Applicants must use the Tier 1 application form for a small generator facility that meets the requirements of OAR 860-082-0045(1).

(b) All applicants may use the application form for Tiers 2, 3, or 4 .

(3) A public utility may require payment of a nonrefundable application processing fee. The amount of the fee depends upon the review tier requested in the application and is intended to cover the reasonable costs of processing and evaluating the application.

(a) The application fee may not exceed \$100 for Tier 1 review, \$500 for Tier 2 review, and \$1000 for review under Tiers 3 and 4.

(b) An applicant must pay the reasonable costs incurred by the public utility to perform any studies and engineering evaluations permitted by these rules and necessary to evaluate the proposed application to interconnect. Before the public utility may assess any costs in excess of the application fee, the public utility must receive written authorization from the applicant. If the applicant does not authorize the additional costs, then the application is deemed withdrawn and the original application

fee is forfeited.

(c) If an application is denied at one review tier, and the applicant resubmits the application at a higher review tier within 15 business days after the date the applicant received notification of the denial, then the applicant maintains the queue position assigned to the original application and the public utility must apply the original application fee and any other fees paid in conjunction with the original application to the fees applicable to the resubmitted application.

(4) If an applicant proposes to interconnect multiple small generator facilities to the public utility's transmission or distribution system at a single point of interconnection, then the public utility must evaluate the applications based on the combined total nameplate rating for all of the small generator facilities. If the combined total nameplate rating exceeds 10 megawatts, then the small generator interconnection rules do not apply.

(5) An applicant must provide documentation of site control with an interconnection application. Site control may be demonstrated through ownership of the site, a leasehold interest in the site, or an option or other right to develop the site for the purpose of constructing the small generator facility. Site control may be documented by a property tax bill, deed, lease agreement, or other legally binding contract.

(6) A public utility may propose to interconnect multiple small generator facilities at a single point of interconnection to minimize costs, and an affected applicant or interconnection customer may not unreasonably refuse such a proposal. An applicant or interconnection customer may, however, elect to maintain a separate point of interconnection if the applicant or interconnection customer agrees to pay the entire cost of the separate interconnection facilities.

(7) Application review process.

(a) Within 10 business days of receipt of an application to interconnect a small generator facility, the interconnecting public utility must provide written notice to the applicant stating whether the application is complete.

(A) If the application is incomplete, then the public utility must provide the applicant with a detailed list of the information needed to complete the application. An application is deemed complete when the public utility receives the listed information. The applicant must provide the listed information within 10 business days of receipt of the list or the application is deemed withdrawn.

(B) If a public utility does not have a record of receipt of an application or cannot locate an application, then the applicant must provide an additional copy of the application to the public utility. If the applicant can demonstrate that a complete application was originally delivered to the public utility at a particular time on a particular date, then the public utility must assign a queue position to the application based on the original time and date of delivery.

(b) Once the public utility deems an application to be complete, the public utility must assign the application a queue position. An applicant must meet all applicable deadlines in the small generator interconnection rules to maintain its queue position unless the deadlines have been waived by

agreement with the interconnecting public utility or by Commission order.

(c) If the public utility determines during the evaluation process that supplemental or clarifying information is required, then the public utility must request the information from the applicant, and the applicant must provide the requested information within 15 business days of the request, or the application will be deemed withdrawn. The time necessary to complete the evaluation of the application may be extended by the time required for the receipt of the additional information. Requests for information do not affect the applicant's queue position.

(d) A public utility must use IEEE 1547 and IEEE 1547.1 to evaluate small generator interconnection applications unless otherwise specified in these rules or unless the Commission grants a waiver to use different or additional standards.

(e) Reference Point of Applicability Review.

(A) For Tier 4 applications, the public utility will raise any concerns about the RPA in the scoping meeting.

(B) For Tier 1 through Tier 3 applications, the public utility notifies an applicant if the proposed RPA is appropriate when it provides screen results. If the RPA is inappropriate the public utility will notify the applicant in writing, including an explanation as to why it requires correction. The applicant must resubmit the application with the corrected RPA within ten business days. If the applicant does not provide the appropriate RPA, a request for an extension of time, or request an applicant options meeting within the deadline, the application will be deemed withdrawn.

(f) Interconnection Agreement. If the proposed interconnection is approved and requires no construction of facilities by the public utility, the public utility must provide the applicant an executed interconnection agreement no later than five business days after approving the interconnection. If the proposed interconnection is approved and requires construction of facilities, the public utility must provide the applicant an executed interconnection agreement, along with a non-binding good faith cost estimate and construction schedule for any required upgrades, no later than 15 business days after approving the interconnection. If the applicant does not return a countersigned interconnection agreement and any required deposit not to exceed the amount in proposed OAR 860-082-0035(5)(a) to the public utility, or request negotiation of a non-standard interconnection agreement, within 15 business days of receipt of an executed interconnection agreement, the application is deemed withdrawn.

(A) An applicant or a public utility is entitled to the terms in the standard form agreement but may choose to negotiate for different terms.

(B) If negotiated changes to a standard interconnection agreement are materially inconsistent with the small generator interconnection rules, then the applicant and the public utility must seek Commission approval of the negotiated interconnection agreement.

(g) The applicant must provide the public utility written notice at least 20 business days before the planned commissioning for the small generator facility.

- (A) The public utility has the option of conducting a witness test at a mutually agreeable time within 10 business days of receipt of the certificate of completion.
- (B) The public utility must provide written notice to the applicant indicating whether the public utility plans to conduct a witness test or will waive the witness test within three business days of receipt of the certificate of completion.
- (C) If the public utility notifies the applicant that it plans to conduct a witness test, but fails to conduct the witness test within 10 business days of receipt of the certificate of completion or within a time otherwise agreed upon by the applicant and the public utility, then the witness test is deemed waived.
- (D) If the witness test is conducted and is successful, or if the public utility waives the witness test, the public utility must provide the countersigned certificate of completion within five business days of conducting the witness test or waiver of witness test.
- (E) If the witness test is conducted and is not acceptable to the public utility, then the public utility must provide written notice to the applicant describing the deficiencies within five business days of conducting the witness test. The public utility must give the applicant 20 business days from the date of the applicant's receipt of the notice to resolve the deficiencies. If the applicant fails to resolve the deficiencies to the reasonable satisfaction of the public utility within 20 business days or at a mutually agreeable time, then the application is deemed withdrawn.
- (h) A public utility must meet all applicable deadlines in the small generator interconnection rules unless the deadlines have been waived by agreement with an applicant or interconnection customer or by Commission order. If the public utility cannot meet an applicable deadline, then the public utility must provide written notice to the applicant or interconnection customer explaining the reasons for the failure to meet the deadline and an estimated alternative deadline. A public utility's failure to meet an applicable deadline does not affect an applicant's queue position.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0030

RULE TITLE: Construction, Operation, Maintenance, and Testing of Small Generator Facilities

RULE SUMMARY: The changes to this rule update references and clarify process.

RULE TEXT:

(1) IEEE 1547. An interconnection customer or applicant must construct, operate, and maintain a small generator facility and its associated interconnection equipment in compliance with IEEE 1547 and 1547.1. New interconnection applicants will be required to use IEEE 1547-2018 compliant equipment by no earlier than June 1, 2024. For purposes of OAR 860-082-0030, capitalized terms not otherwise defined in Division 082 have the meaning set forth in IEEE 1547.

(a) Small generator facilities compliant with IEEE 1547 must conform with the following minimum requirements:

(A) Abnormal performance requirements: Category III Ride-Through capabilities must be supported for inverter-based small generator facilities. Rotating small generator facilities must meet Category I Ride-Through capabilities, at minimum.

(B) Normal performance requirements: Inverter-based small generator facilities must meet reactive power requirements of IEEE 1547 Category B. Rotating small generator facilities must meet Category A, and may meet Category B.

(C) Inverter-based interconnection equipment will be tested to and certified as being compliant with UL 1741 Third Edition, Supplement SB, by a NRTL. Equipment that is not certified by a NRTL may require additional evaluation and commissioning testing to confirm compliance with IEEE 1547.

(b) Interconnection requirements handbook. Each public utility must post an interconnection requirements handbook on its public website. Prior to revising its interconnection requirements handbook, a public utility must provide public notice on its website and to interconnection customers. The public utility must provide a minimum of 30 days for interested persons to comment, and the public utility must provide public responses within 30 days to any comments received. Interested persons may request Commission intervention if concerns raised are not fully addressed by the utility.

(c) Preferred default settings. A public utility must allow small generator facilities to interconnect using the public utility's preferred default settings, except when the application reviewed under Tier 4, OAR 860-082-0060, or the application fails the Tier 1, Tier 2, or Tier 3 approval criteria in OAR 860-082-0045(2), OAR 860-082-0050(2), or OAR 860-082-0055(2). Interconnection requirements handbooks must include preferred default settings. As applicable, the following must be identified in the interconnection requirements handbook:

(A) Voltage and frequency trip settings;

(B) Frequency droop settings;

(C) Activated reactive power control function and default settings;

(D) Voltage active power (volt-watt) mode activation and default settings; and

(E) Communication protocols and ports requirements.

(2) The applicant must provide written notice to the interconnecting public utility 10 business days before beginning operation of an approved small generator facility.

(3) Before beginning operation of a small generator facility, an interconnection customer or applicant must receive approval of the facility under the small generator interconnection rules and must execute an interconnection agreement with the interconnecting public utility. Applicants or interconnection customers are entitled to a 20-year term for an interconnection agreement, or, if the interconnection customer and the public utility have entered a separate Power Purchase Agreement for a specified period of time, to a term that coincides with the length of such Power Purchase Agreement..

(4) A small generator facility must be capable of being isolated from the interconnecting public utility's transmission or distribution system. An interconnection customer may not disable an isolation device without the prior written consent of the interconnected public utility.

(a) For a small generator facility interconnecting to a primary line, the interconnection customer or applicant must use a lockable, visible-break isolation device readily accessible to the public utility.

(b) For a small generator facility interconnecting to a secondary line, the interconnection customer or applicant must use a lockable isolation device that is readily accessible by the public utility. The status of the isolation device must be clearly indicated. An exception from the requirement to use a lockable isolation device is allowed for a small generator facility that has a maximum total output of 30 amperes or less; is connected to a secondary line; uses lab-tested, inverter-based interconnection equipment; and is interconnected to the distribution system through a metered service owned by the interconnected public utility. In this limited case, the meter base may serve as the required isolation device if it is readily accessible to the public utility.

(A) A draw-out type circuit breaker with the provision for padlocking at the draw-out position can be considered an isolation device.

(B) The interconnection customer or applicant may elect to provide the public utility access to an isolation device that is contained in a building or area that may be unoccupied and locked or not otherwise readily accessible to the public utility. The interconnection customer or applicant must provide a lockbox capable of accepting a lock provided by the public utility that provides ready access to the isolation device. The interconnection customer or customer must install the lockbox in a location that is readily accessible by the public utility and must affix a placard in a location acceptable to the public utility that provides clear instructions to utility personnel on how to access the isolation device.

(c) Other than the exception in (4)(b), all isolation devices must be installed, owned, and maintained by the interconnection customer or applicant; must be capable of interrupting the full load of the small generator facility; and must be located between the small generator facility and the point of interconnection.

(5) An interconnecting public utility must have access to an interconnection customer's or an applicant's premises for any reasonable purpose related to an interconnection application or an interconnected small generator facility. The public utility must request access at reasonable hours and upon reasonable notice. In the event of an emergency or hazardous condition, the public utility may access the interconnection customer's or applicant's premises at any time without prior notice, but the public utility must provide written notice within five business days after entering the interconnection customer's or applicant's premises that describes the date of entry, the purpose of entry, and any actions performed on the premises.

(6) When a small generator facility undergoes maintenance or testing in compliance with the small generator interconnection rules, IEEE 1547, or IEEE 1547.1, the interconnection customer must retain written records for at least seven years documenting the maintenance and the results of testing. The interconnection customer must provide copies of these records to the interconnected public utility upon request.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

ADOPT: 860-082-0033

RULE TITLE: Export Controls

RULE SUMMARY: This new rule establishes requirements for use of export controls for small generator facilities.

RULE TEXT:

(1) If a small generator facility uses any configuration or operating mode in section (3) to limit the export of electrical power across the Point of Interconnection, then the export capacity is only the amount capable of being exported (not including any Inadvertent export). To prevent impacts on system safety and reliability, any inadvertent export from a small generator facility must comply with the limits identified in this rule. The export capacity specified by the interconnection customer in the application will subsequently be included as a limitation in the interconnection agreement.

(2) An application proposing to use a configuration or operating mode to limit the export of electrical power across the Point of Interconnection must include proposed control and/or protection settings.

(3) Acceptable export control methods.

(a) Export control methods for non-exporting small generator facility:

(A) Reverse Power Protection (Device 32R): To limit export of power across the Point of Interconnection, a reverse power protective function is implemented using a utility grade protective relay. The default setting for this protective function is 0.1 percent (export) of the service transformer's nominal base nameplate power rating, with a maximum 2.0 second time delay to limit inadvertent export. When a project is located on a circuit using high speed reclosing the public utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing. When instituting this requirement, the utility must provide:

- i. An explanation for the requirement to the interconnection applicant;
- ii. A list of additional equipment needed to satisfy the requirement;
- iii. A list of equipment modifications or options that would alleviate the need for additional equipment.

(B) Minimum Power Protection (Device 32F): To limit export of power across the Point of Interconnection, a minimum import protective function is implemented utilizing a utility grade protective relay. The default setting for this protective function is 5 percent (import) of the small generator facility's total nameplate rating, with a maximum 2.0 second time delay to limit Inadvertent export. When a project is located on a circuit using high speed reclosing the public utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing. When instituting this requirement, the utility must provide:

- i. An explanation for the requirement to the interconnection applicant;
- ii. A list of additional equipment needed to satisfy the requirement;
- iii. A list of equipment modifications or options that would alleviate the need for additional equipment.

(C) Relative distributed energy resource rating: This option requires the small generator facility's nameplate rating to be so small in comparison to its host facility's minimum load that the use of additional protective functions is not required to ensure that power will not be exported to the electric distribution system. This option requires the small generator facility's nameplate rating to be no greater than 50 percent of the interconnection customer's verifiable minimum host load during relevant hours over the past 12 months. This option is not available for interconnections to area networks or spot networks.

(b) Export control methods for limited export small generator facility.

(A) Directional Power Protection (Device 32): To limit export of power across the Point of Interconnection, a directional power protective function is implemented using a utility grade protective relay. The default setting for this protective function is be the export capacity value, with a maximum 2.0 second time delay to limit Inadvertent export. When a project is located on a circuit using high speed reclosing the public utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing. When instituting this requirement, the utility must provide:

- i. An explanation for the requirement to the interconnection applicant;
- ii. A list of additional equipment needed to satisfy the requirement;
- iii. A list of equipment modifications or options that would alleviate the need for additional equipment.

(B) Configured power rating: A reduced output power rating utilizing the power rating configuration setting may be used to ensure the small generator facility does not generate power beyond a certain value lower than the nameplate rating. The configuration setting corresponds to the active or apparent power ratings in Table 28 of IEEE Std 1547-2018, as described in subclause 10.4. A local small generator facility communication interface is not required to utilize the configuration setting as long as it can be set by other means. The reduced power rating may be indicated by means of a nameplate rating replacement, a supplemental adhesive nameplate rating tag to indicate the reduced nameplate rating, or a signed attestation from the customer confirming the reduced capacity.

(c) Export control methods for non-exporting small generator facility or limited export small generator facility.

(A) Certified power control systems: Small generator facility may use certified power control systems to limit export. Small generator facility utilizing this option must use a power control system and inverter certified per UL 1741 by a NRTL with a maximum open loop response time of no more than 30 seconds to limit Inadvertent export. NRTL testing to the UL Power Control System Certification Requirement Decision must be accepted until similar test procedures for power control systems are included in a standard. This option is not available for interconnections to area networks or spot networks.

(B) Agreed-upon means: Small generator facility may be designed with other control systems and/or protective functions to limit export and inadvertent export if mutual agreement is reached with the Distribution Provider. The limits may be based on technical limitations of the interconnection customer's equipment or the electric distribution system equipment. To ensure inadvertent export

remains within mutually agreed-upon limits, the interconnection customer may use an uncertified power control system, an internal transfer relay, energy management system, or other customer facility hardware or software if approved by the Distribution Provider.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0035

RULE TITLE: Cost Responsibility

RULE SUMMARY: The rule change clarifies that the study costs in section one applies to Tier 4 applications.

RULE TEXT:

- (1) Study costs. Whenever a study is required under Tier 4 of the small generator interconnection rules, the applicant must pay the public utility for the reasonable costs incurred in performing the study. The public utility must base study costs on the scope of work determined and documented in the feasibility study agreement, the system impact study agreement, or the facilities study agreement, as applicable. The estimated engineering costs used in calculating study costs must not exceed \$100 per hour. A public utility may adjust the \$100 hourly rate once in January of each year to account for inflation and deflation as measured by the Consumer Price Index. Before beginning a study, a public utility may require an applicant to pay a deposit of up to 50 percent of the estimated costs to perform the study or \$1,000, whichever is less.
- (2) Interconnection facilities. For interconnection review under Tier 4, a public utility must identify the interconnection facilities necessary to safely interconnect the small generator facility with the public utility's transmission or distribution system. The applicant must pay the reasonable costs of the interconnection facilities. The public utility constructs, owns, operates, and maintains the interconnection facilities.
- (3) Interconnection equipment. An applicant or interconnection customer must pay all expenses associated with constructing, owning, operating, maintaining, repairing, and replacing its interconnection equipment. Interconnection equipment is constructed, owned, operated, and maintained by the applicant or interconnection customer.
- (4) System upgrades. A public utility must design, procure, construct, install, and own any system upgrades to the public utility's transmission or distribution system necessitated by the interconnection of a small generator facility. A public utility must identify any adverse system impacts on an affected system caused by the interconnection of a small generator facility to the public utility's transmission or distribution system. The public utility must determine what actions or upgrades are required to mitigate these impacts. Such mitigation measures are considered system upgrades as defined in these rules. The applicant must pay the reasonable costs of any system upgrades.
- (5) A public utility may not begin work on interconnection facilities or system upgrades before an applicant receives the public utility's good-faith, non-binding cost estimate and provides written notice to the public utility that the applicant accepts the estimate and agrees to pay the costs. A public utility may require an applicant to pay a deposit before beginning work on the interconnection facilities or system upgrades.
 - (a) If an applicant agrees to make progress payments on a schedule established by the applicant and the interconnecting public utility, then the public utility may require the applicant to pay a deposit of up to 25 percent of the estimated costs or \$10,000, whichever is less. The public utility and the applicant must agree on progress billing, final billing, and payment schedules before the public utility begins work.

(b) If an applicant does not agree to make progress payments, then the public utility may require the applicant to pay a deposit of up to 100 percent of the estimated costs. If the actual costs are lower than the estimated costs, then the public utility must refund the unused portion of the deposit to the applicant within 20 business days after the actual costs are determined.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0040

RULE TITLE: Insurance

RULE SUMMARY: The rule changes update "nameplate capacity" to "nameplate rating."

RULE TEXT:

(1) A public utility may not require an applicant or an interconnection customer with a small generator facility with a nameplate rating of 200 kilowatts or less to obtain liability insurance in order to interconnect with the public utility's transmission or distribution system.

(2) A public utility may require an applicant or an interconnection customer with a small generator facility with a nameplate rating greater than 200 kilowatts to obtain prudent amounts of general liability insurance in order to interconnect to the public utility's transmission or distribution system.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0045

RULE TITLE: Tier 1 Interconnection Review

RULE SUMMARY: The rule changes update the screening process and clarify the Tier 1 Application for Interconnection review process.

RULE TEXT:

(1) A public utility must use the Tier 1 review procedures when an applicant submits an application to interconnect a small generator facility that meets the following requirements:

(a) The small generator facility must have an export capacity not greater than 25 kilowatts, a nameplate rating not greater than 50 kilowatts, and use a UL 1741 certified inverter; and

(b) The small generator facility must not be interconnected to a transmission line or an area network.

(2) Tier 1 Approval Criteria. A public utility must approve an application for interconnection under the Tier 1 interconnection review procedures if the small generator facility meets the approval criteria in subsections (a) through (f). A public utility may not impose different or additional approval criteria.

(a) A Tier 1 small generator facility interconnection must use existing public utility facilities.

(b) Substation transformer backfeed screen. Where existing protective devices and equipment cannot adequately support backfeed, the aggregated export capacity on the substation transformer must be less than 80 percent of the relevant minimum load for the substation transformer.

(c) Penetration Screen for interconnection to a radial distribution circuit.

(A) If 12 months of minimum load data (including onsite load but not station service load served by the proposed small generator facility) are available for the line section, the aggregated export capacity on the line section is less than 90 percent of the relevant minimum load for all line sections bounded by automatic sectionalizing devices upstream of the proposed small generator facility;

(B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed small generator facility) are not available for line section, the aggregated export capacity on the circuit is less than 90 percent of the relevant minimum load for the feeder;

(C) If minimum load data are not available for the line section or the circuit, the aggregated export capacity on the circuit must not exceed 15 percent of the line section annual peak load as most recently measured at the substation or calculated for the line section.

(d) Network Screen. For interconnection of a small generator facility within a spot network, the aggregate nameplate rating may not exceed 20 percent of the spot network anticipated minimum load. The public utility may select any of the following methods to determine anticipated minimum load:

(A) The spot network's measured minimum load in the previous year, if available;

(B) Five percent of the spot network's maximum load in the previous year;

(C) The applicant's good faith estimate, if provided; or

(D) The public utility's good faith estimate if provided in writing to the applicant along with the reasons why the public utility considered the other methods to estimate minimum load inadequate.

(e) Single-Phase Shared Secondary Screen. For interconnection of a small generator facility to a single-phase shared secondary line, the aggregated export capacity on the shared secondary must not exceed 65 percent of the transformer nameplate power rating.

(f) Service Imbalance Screen. For interconnection of a single-phase small generator facility to the center tap neutral of a 240-volt service line, the addition of the small generator facility must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate power rating of the service transformer.

(3) In addition to the timelines and requirements in OAR 860-082-0025, the public utility must provide written notice to the applicant stating whether the small generator facility meets the Tier 1 approval criteria no later than 15 business days from the date a Tier 1 interconnection application is deemed complete. If a public utility does not notify an applicant whether the interconnection is approved or denied within 20 business days after the application is deemed complete, the interconnection will be deemed approved.

(4)) Interconnection after passing screens. If the proposed interconnection passes the screens, the public utility must follow the requirements in OAR 860-082-0025(7)(f).

(5) Approval despite screen failure. Despite the failure of one or more screens, the public utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability. If the public utility determines that the small generator facility can be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.

(6) Process after screen failure. If the public utility cannot determine that the small generator facility may nevertheless be interconnected consistent with safety, reliability, and power quality standards, at the time the public utility notifies the applicant of the Tier 1 review results, the public utility must provide the applicant with:

(a) The screen results including specific information on the reason(s) for failure in writing using a standard format approved by the Commission; and

(b) An executable Supplemental Review Agreement.

(c) In addition, the public utility must allow the applicant to select one of the following, at the

applicant's option. The applicant must notify the public utility of its selection within 10 business days or the application will be deemed withdrawn.

(A) Request an applicant options meeting;

(B) Undergo supplemental review in accordance with OAR 860-082-0063; or

(C) Continue evaluating the application under Tier 4.

(7) Applicant options meeting. If the applicant requests an applicant options meeting, the public utility shall offer to convene a meeting at a mutually agreeable time within 15 business days of the applicant's request. At the applicant options meeting the public utility shall provide the applicant the opportunity to review the screen analysis and related results, to designate a different RPA, to review possible customers-generator modifications, and to discuss what further steps are needed to permit the small generator facility to connect safely and reliably.

(8) The interconnection process is not complete until:

(a) The witness test, if conducted by the public utility, is successful; and

(b) The applicant and public utility execute a certificate of completion. The certificate of completion must follow the standard form certificate developed by the public utility and approved by the Commission.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0050

RULE TITLE: Tier 2 Interconnection Review

RULE SUMMARY: The rule changes update the screening process and clarify the Tier 2 Application for Interconnection review process.

RULE TEXT:

(1) A public utility must use the Tier 2 interconnection review procedures when an applicant submits an application requesting Tier 2 review to interconnect a small generator facility that meets the following requirements:

(a) The small generator facility does not qualify for the Tier 1 interconnection review requirements;

(b) If the small generator facility is inverter-based, the small generator facility's export capacity does not exceed the limits identified in Table 1 attached, which vary according to the voltage of the line at the proposed point of interconnection .

(c) Inverter-based small generator facilities located within 2.5 line miles of a substation and on a main distribution line with minimum 600-amp capacity are eligible for Tier 2 interconnection under higher thresholds:

(d) If the small generator facility is not inverter-based, the small generator facility's export capacity is two megawatts or less;

(e) The small generator facility must not interconnect to a transmission line, or area network; and

(f) The small generator facility must use interconnection equipment that is either lab-tested equipment or field-tested equipment. For equipment to gain status as field-tested equipment, the applicant must provide all the documentation from the prior public utility approval including any interconnection studies and the certificate of completion.

(2) Tier 2 Approval Criteria. A public utility must approve an application to interconnect a small generator facility under the Tier 2 interconnection review procedures if the facility meets the approval criteria in subsections (a) through (l). A public utility may not impose different or additional approval criteria.

(a) Substation transformer backfeed screen. Where existing protective devices and equipment cannot adequately support backfeed, the aggregated export capacity on the substation transformer must be less than 80 percent of the relevant minimum load for the substation transformer.

(b) Penetration Screen for interconnection to a radial distribution circuit.

(A) If 12 months of minimum load data (including onsite load, but not station service load served by the proposed small generator facility) are available for the line section, the aggregated export capacity on the line section is less than 90 percent of the relevant minimum load for all line sections bounded by automatic sectionalizing devices upstream of the proposed small generator facility;

(B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed small generator facility) are not available for line section, the aggregated export capacity on the circuit is less than 90 percent of the relevant minimum load for the feeder;

(C) If minimum load data are not available for the line section or the circuit, the aggregated export capacity on the circuit must not exceed 15 percent of the line section annual peak load as most recently measured at the substation or calculated for the line section.

(c) Network Screen. For interconnection of a small generator facility within a spot network, the aggregate nameplate rating may not exceed 20 percent of the spot network's anticipated relevant minimum load. The public utility may select any of the following methods to determine anticipated minimum load:

(A) The spot network's measured minimum load in the previous year, if available;

(B) Five percent of the spot network's maximum load in the previous year;

(C) The applicant's good faith estimate, if provided; or

(D) The public utility's good faith estimate if provided in writing to the applicant along with the reasons why the public utility considered the other methods to estimate minimum load inadequate.

(d) Fault Current Screen. The small generator facility, aggregated with other generation on the distribution circuit, will not contribute more than 10 percent to the distribution circuit's maximum fault current at the point on the primary voltage distribution line nearest the point of interconnection.

(e) Short-Circuit Interrupting Capability Screen. The aggregated nameplate rating on the distribution circuit must not cause any distribution protective devices and equipment (including substation breakers, fuse cutouts, and line reclosers) or other public utility equipment on the transmission or distribution system to be exposed to fault currents exceeding 90 percent of the short circuit interrupting capability. The small generator facility's point of interconnection must not be located on a circuit that already exceeds 90 percent of the short circuit interrupting capability.

(f) Transient Stability Screen. The small generator facility's nameplate rating, in aggregate with other small generator facilities interconnected to the distribution side of a substation transformer feeding the circuit where the small generator facility proposes to interconnect must not exceed 10 megawatts in an area where there are known or posted transient stability limitations to generating units located in the general electrical vicinity (for example, three or four distribution busses from the point of interconnection).

(g) Line Configuration Screen. Using Table 2 attached, determine the type of interconnection to a primary distribution line. This screen includes a review of the type of electrical service provided to the project, including line configuration and the transformer connection to limit the potential for creating over-voltages on the interconnecting public utility's electric power system due to a loss of ground during the operating time of any anti-islanding function.

(h) Single-Phase Shared Secondary Screen. For interconnection of a small generator facility to a single-phase shared service line on the transmission or distribution system, the aggregated export capacity on the shared secondary must not exceed 65 percent of the transformer nameplate power rating.

(i) Service Imbalance Screen. For interconnection of a single-phase small generator facility to the center tap neutral of a 240-volt service line, the addition of the small generator facility must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate power rating of the service transformer.

(j) Except as provided in section (4), the interconnection of the small generator facility must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.

(k) If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the small generator facility must not be a synchronous machine. If the small generator facility is a synchronous machine, then the applicant must submit a Tier 4 application.

(l) Inadvertent Export Screen. For interconnection of a proposed small generator facility that can introduce inadvertent export, where the nameplate rating minus the export capacity is greater than 250 kilowatts, the following inadvertent export screen is required. With a power change equal to the nameplate rating minus the export capacity, the change in voltage at the point on the medium voltage (primary) level nearest the point of interconnection does not exceed three percent. Voltage change will be estimated applying the formula shown in Figure 1 attached.

(3) Timelines. In addition to the timelines and requirements in OAR 860-082-0025 and if a net metering facility, OAR 860-039, within 20 business days after a public utility notifies an applicant that its application is complete, the public utility must:

(a) Evaluate the application using the Tier 2 approval criteria in section (2);

(b) Review any independent analysis of the proposed interconnection provided by the applicant that was performed using the Tier 2 approval criteria; and

(c) Provide written notice to the applicant stating whether the public utility approved the application. If the proposed interconnection passes the screens, the public utility must follow the requirements in OAR 860-082-0025(7)(f). If applicable, the public utility must include a comparison of its evaluation to the applicant's independent analysis.

(4) Approval despite screen failure. Despite the failure of one or more screens, the public utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability. If the public utility determines that the small generator facility could be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the

applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.

(5) Process after screen failure. If the public utility cannot determine that the small generator facility may nevertheless be interconnected consistent with safety and reliability standards, at the time the public utility notifies the applicant of the Tier 2 review results, the public utility must provide the applicant with:

(a) The screen results, including specific information on the reason(s) for failure in writing, using a standard format approved by the Commission; and

(b) An executable Supplemental Review Agreement.

(c) In addition, the public utility must allow the applicant to select one of the following, at the applicant's option. The applicant must notify the public utility of its selection within 10 business days or the application will be deemed withdrawn.

(A) Request an applicant options meeting;

(B) Undergo supplemental review in accordance with OAR 860-082-0063; or

(C) Continue evaluating the application under Tier 4.

(6) Applicant options meeting. If the applicant requests an applicant options meeting, the public utility shall offer to convene a meeting at a mutually agreeable time within 15 business days of the applicant's request. At the applicant options meeting the public utility shall provide the applicant the opportunity to review the screen analysis and related results, to designate a different RPA, to review possible customers-generator modifications, and to discuss what further steps are needed to permit the small generator facility to connect safely and reliably.

(7) The interconnection process is not complete until:

(a) The public utility approves the application;

(b) Any minor modifications to the transmission or distribution system required under section (4) are complete;

(c) The witness test, if conducted by the public utility, is successful; and

(d) The applicant and public utility execute a certificate of completion. The certificate of completion must follow the standard form certificate developed by the public utility and approved by the Commission.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0055

RULE TITLE: Tier 3 Interconnection Review

RULE SUMMARY: The rule changes update and clarify Tier 3 Application for Interconnection review process.

RULE TEXT:

(1) A public utility must use the Tier 3 interconnection review procedures when the applicant submits an application requesting Tier 3 review to interconnect a small generator facility that meets the following requirements:

(a) The small generator facility must have a nameplate rating of 10 megawatts or less;

(b) The small generator facility must not be connected to a transmission line;

(d) The small generator facility must not export power beyond the point of interconnection; and

(d) The small generator facility must use low forward power relays or other protection functions that prevent power flow onto the area network.

(2) Tier 3 Approval Criteria. A public utility must approve an application to interconnect a small generator facility under the Tier 3 interconnection review procedures if the facility meets the Tier 2 approval criteria in OAR 860 082 0050(2)(a) (b), (i) and the additional approval criteria in subsections (a), (b), or (c) of this section. A public utility may not impose different or additional approval criteria.

(a) For a small generator facility to interconnect to the load side of an area network distribution circuit, the small generator facility must meet the following criteria:

(A) The nameplate rating of the small generator facility must be 50 kilowatts or less;

(B) The small generator facility must use lab-tested, inverter-based interconnection equipment;

(C) The aggregated nameplate rating on the area network must not exceed five percent of an area network's maximum load or 50 kilowatts, whichever is less; and

(D) Except as allowed in subsection (2)(c), the interconnection of the small generator facility must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.

(b) For a small generator facility to interconnect to a distribution circuit that is not networked, the small generator facility must meet the following criteria:

(A) The aggregated nameplate rating on the circuit must be 10 megawatts or less;

(B) The small generator facility's point of interconnection must be to a radial distribution circuit;

(C) The small generator facility must not be served by a shared transformer;

(D) Except as allowed in subsection (2)(c), the interconnection of the small generator facility must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment; and

(E) If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the small generator facility must not be a synchronous machine. If the small generator facility is a synchronous machine, then the applicant must submit a Tier 4 application.

(c) If the small generator facility fails to meet one or more of the Tier 3 approval requirements, but the public utility determines that the small generator facility could be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application under Tier 3.

(3) In addition to the timelines and requirements in OAR 860-082-0025, the following timelines and requirements apply to Tier 3 interconnection reviews:

(a) An interconnecting public utility must schedule a scoping meeting within 10 business days after notifying an applicant that its application is complete. The applicant may agree to waive the scoping meeting requirement.

(b) Within 20 business days after a public utility notifies an applicant its application is complete or a scoping meeting is held, whichever is later, the public utility must:

(A) Evaluate the application using the Tier 3 approval criteria;

(B) Review any independent analysis of the proposed interconnection provided by the applicant that was performed using the Tier 3 approval criteria; and

(C) Provide written notice to the applicant stating whether the public utility approved the application. If the proposed interconnection passes the screens, the public utility must follow the requirements in OAR 860-082-0025(7)(f). If applicable, the public utility must include a comparison of its evaluation to the applicant's independent evaluation.

(4) Approval despite screen failure. Despite the failure of one or more screens, the public utility, at its sole option, may approve the interconnection provided such approval is consistent with safety and reliability.

(5) Process after screen failure. If the public utility cannot determine that the small generator facility may nevertheless be interconnected consistent with safety and reliability standards, at the time the public utility notifies the applicant of the Tier 3 review results, the public utility must provide the applicant with:

(a) The screen results, including specific information on the reason(s) for failure in writing using a standard format approved by the Commission; and

(b) An executable Supplemental Review Agreement.

(c) In addition, the public utility will allow the applicant to select one of the following, at the applicant's option:

(A) Request an applicant options meeting;

(B) Undergo supplemental review in accordance with OAR 860-082-0063; or

(C) Continue evaluating the application under Tier 4.

The applicant must notify the public utility of its selection within 10 business days or the application will be deemed withdrawn.

(6) Applicant options meeting. If the applicant requests an applicant options meeting, the public utility shall offer to convene a meeting at a mutually agreeable time within 15 business days of the applicant's request. At the applicant options meeting the public utility shall provide the applicant the opportunity to review the screen analysis and related results, to designate a different RPA, to review possible customers-generator modifications, and to discuss what further steps are needed to permit the small generator facility to connect safely and reliably.

(7) The interconnection process is not complete until:

(a) The public utility approves the application;

(b) Any minor modifications to the transmission or distribution system required under subsection (2)(c) are complete;

(c) The witness test, if conducted by the public utility, is successful; and

(d) The applicant and public utility execute a certificate of completion. The certificate of completion must follow the standard form certificate developed by the public utility and approved by the Commission.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0060

RULE TITLE: Tier 4 Interconnection Review

RULE SUMMARY: The rule changes provide updates and clarifications to Tier 4 Application for Interconnection review process.

RULE TEXT:

(1) A public utility must use the Tier 4 interconnection review procedures when an applicant submits an application requesting Tier 4 review to interconnect a small generator facility meeting the following:

(a) The small generator facility must have a nameplate rating of 10 megawatts or less.

(b) An applicant whose Tier 1, Tier 2, or Tier 3 application was denied may request that the public utility treat that existing application already in the public utility's possession as a new Tier 4 application. Within ten business days of receipt of the applicant's request to use the existing application, the public utility will transfer the existing application to the Tier 4 process and notify the applicant whether or not the application is complete. If the application is incomplete, the public utility must provide a written list detailing all information that the applicant must provide to complete the application. The applicant will have ten business days after receipt of the list to submit the listed information. Otherwise, the application will be deemed withdrawn. The public utility must notify the applicant within ten business days of receipt of the revised application whether the revised application is complete or incomplete. The public utility may deem the application withdrawn if it remains incomplete.

(2) A public utility must approve an application to interconnect a small generator facility under the Tier 4 interconnection review procedures if the public utility determines that the safety and reliability of the public utility's transmission or distribution system will not be compromised by interconnecting the small generator facility. The applicant must pay the reasonable costs of any interconnection facilities or system upgrades necessitated by the interconnection.

(3) In addition to the timelines and requirements in OAR 860-082-0025, the timelines and requirements in sections (5) through (12) of this rule apply to Tier 4 interconnection reviews.

(4) A public utility and an applicant may agree to waive the requirement for a scoping meeting, the system impact study, or the facilities study. The applicant may waive the requirement for a feasibility study.

(5) A public utility must schedule a scoping meeting within 10 business days after notifying an applicant that its application is complete.

(a) The public utility and the applicant must bring to the scoping meeting all personnel, including system engineers, as may be reasonably required to accomplish the purpose of the meeting.

(b) The public utility and applicant must discuss whether the public utility should perform a feasibility study or proceed directly to a system impact study, a facilities study, or an interconnection agreement.

(c) If the public utility determines that no studies are necessary, then the public utility must follow the requirements in OAR 860-082-0025(7) if:

(A) The application meets the criteria in section (2); and

(B) The interconnection of the small generator facility does not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.

(d) If the public utility determines that no studies are necessary and that the small generator facility could be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must send the applicant an executed interconnection agreement within 15 business days of receipt of the applicant's agreement to pay for the minor modifications.

(6) If the applicant requests a feasibility study, the public utility must provide the applicant with an executable feasibility study agreement within five business days of the date of the scoping meeting.

(a) The feasibility study agreement must include a detailed scope for the feasibility study, a reasonable schedule for completion of the study, and a good-faith, non-binding estimate of the costs to perform the study.

(b) The feasibility study agreement must follow the standard form agreement developed by the public utility and approved by the Commission.

(c) The applicant must execute the feasibility study agreement within 15 business days of receipt of the agreement or the application is deemed withdrawn.

(d) The public utility must make reasonable, good-faith efforts to follow the schedule set forth in the feasibility study agreement for completion of the study.

(e) The feasibility study must identify any potential adverse system impacts on the public utility's transmission or distribution system or an affected system that may result from the interconnection of the small generator facility. In determining possible adverse system impacts, the public utility must consider the aggregated nameplate rating or export capacity when applicable of all generating facilities that, on the date the feasibility study begins, are directly interconnected to the public utility's transmission or distribution system, have a pending completed application to interconnect with a higher queue position, or have an executed interconnection agreement with the public utility.

(f) The public utility must evaluate multiple potential points of interconnection at the applicant's request. The applicant must pay the costs of this additional evaluation.

- (g) The public utility must provide a copy of the feasibility study to the applicant within five business days of the study's completion.
- (h) If the feasibility study identifies any potential adverse system impacts, then the public utility must perform a system impact study.
- (i) If the feasibility study does not identify any adverse system impacts, then the public utility must perform a facilities study if the public utility reasonably concludes that a facilities study is necessary to adequately evaluate the application.
- (A) If the public utility concludes that a facilities study is not required, then the public utility must approve the application if the application meets the criteria in section (2) and the interconnection of the small generator facility does not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.
- (B) If the public utility concludes that a facilities study is not required and that the small generator facility could be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application.
- (7) If a public utility is required to perform a system impact study under subsection (6)(h), or if an applicant and a public utility agree in the scoping meeting to waive the feasibility study and proceed directly to the system impact study, then the public utility must provide the applicant with an executable system impact study agreement within five business days of completing the feasibility study or from the date of the scoping meeting, whichever is applicable.
- (a) The system impact study agreement must include a detailed scope for the system impact study, a reasonable schedule for completion of the study, and a good-faith, non-binding estimate of the costs to perform the study.
- (b) The system impact study agreement must follow the standard form agreement developed by the public utility and approved by the Commission.
- (c) The applicant must execute the system impact study agreement within 15 business days of receipt of the agreement or the application is deemed withdrawn.
- (d) The public utility must make reasonable, good-faith efforts to follow the schedule set forth in the system impact study agreement for completion of the study.
- (e) The system impact study must identify and detail the impacts on the public utility's transmission or distribution system or on an affected system that would result from the interconnection of the small generator facility if no modifications to the small generator facility or system upgrades were made.

The system impact study must include evaluation of the adverse system impacts identified in the feasibility study and in the scoping meeting.

(f) In determining possible adverse system impacts, the public utility must consider the aggregated nameplate rating, or export capacity when applicable, of all generating facilities that, on the date the system impact study begins, are directly interconnected to the public utility's transmission or distribution system, have a pending completed application to interconnect with a higher queue position, or have an executed interconnection agreement with the public utility. If the small generator facility limits export pursuant to OAR 860-082-0033, the system impact study must use export capacity instead of the nameplate rating, except when assessing fault current contribution. To assess fault current contribution, the system impact study must use the rated fault current if the customer provides the relevant information or provide a written explanation for cases where the utility does not want to rely on customer-provided data. An example of customer-provided data would include provision of manufacturer test data (pursuant to the fault current test described in IEEE 1547.1-2020 clause 5.18) showing that the fault current is independent of the nameplate rating. The public utility must provide an explanation for any cases where the utility does not want to rely on customer-provided data.

(g) The system impact study must include:

(A) A short circuit analysis;

(B) A stability analysis;

(C) A power flow analysis;

(D) Voltage drop and flicker studies;

(E) Protection and set point coordination studies;

(F) Grounding reviews;

(G) The underlying assumptions of the study;

(H) The results of the analyses; and

(I) Any potential impediments to providing the requested interconnection service.

(h) If an applicant provides an independent system impact study to the public utility, then the public utility must evaluate and address any alternative findings from that study.

(i) The public utility must provide a copy of the system impact study to the applicant within five business days of completing the study.

(j) If a public utility determines in a system impact study that interconnection facilities or system upgrades are necessary to safely interconnect a small generator facility, then the public utility must

perform a facilities study.

(k) If the public utility determines that no interconnection facilities or system upgrades are required, and the public utility concludes that the application meets the criteria in section (2), then the public utility must approve the application with 15 business days of completion of the system impact study.

(l) If the public utility determines that no interconnection facilities or system upgrades are required and that the small generator facility could be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the public utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the applicant authorizes the public utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the public utility must approve the application within 15 business days of the applicant's agreement to pay for the minor modifications.

(8) If a public utility is required to perform a facilities study under subsection (6)(i) or 7(j), or if an applicant and a public utility agree in the scoping meeting to waive the system impact study and proceed directly to the facilities study, then the public utility must provide the applicant with an executable facilities study agreement within five business days of completing the system impact study or within five business days from the date of the scoping meeting, whichever is applicable.

(a) The facilities study agreement must include a detailed scope for the facilities study, a reasonable schedule for completion of the study, and a good-faith, non-binding estimate of the costs to perform the study.

(b) The facilities study agreement must follow the standard form agreement developed by the public utility and approved by the Commission.

(c) The applicant must execute the interconnection facilities study agreement within 15 business days after receipt of the agreement or the application is deemed withdrawn.

(d) The public utility must make reasonable, good-faith efforts to follow the schedule set forth in the facilities study agreement for completion of the study.

(e) The facilities study must identify the interconnection facilities and system upgrades required to safely interconnect the small generator facility and must determine the costs for the facilities and upgrades, including equipment, engineering, procurement, and construction costs. Design for any required interconnection facilities or system upgrades must be performed under the facilities study agreement. The public utility must also identify the electrical switching configuration of the equipment, including transformer, switchgear, meters, and other station equipment.

(f) The public utility may contract with a third-party consultant to complete the interconnection facilities and system upgrades identified in the facilities study. A public utility and an applicant may agree in writing to allow the applicant to hire a third-party consultant to complete the interconnection facilities and system upgrades, subject to public utility oversight and approval.

- (g) The interconnection facilities study must include a detailed estimate of the time required to procure, construct, and install the required interconnection facilities and system upgrades.
- (h) If the applicant agrees to pay for the interconnection facilities and system upgrades identified in the facilities study, then the public utility must approve the application.
- (9) The public utility may contract with a third-party consultant to complete a feasibility study, system impact study, or facilities study. A public utility and an applicant may agree in writing to allow the applicant to hire a third-party consultant to complete a feasibility study, system impact study, or facilities study, subject to public utility oversight and approval.
- (10) The interconnection process is not complete until:
- (a) The public utility approves the application;
 - (b) Any interconnection facilities or system upgrades have been completed;
 - (c) Any minor modifications to the public utility's transmission or distribution system required under subsections (5)(d), 6(i)(B), or (7)(l) have been completed;
 - (d) The witness test, if conducted by the public utility, is successful; and
 - (e) The applicant and public utility execute a certificate of completion.
- (11) If a small generator facility is not approved under the Tier 4 interconnection review procedures, then the public utility must provide a written explanation of the denial to the applicant.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

ADOPT: 860-082-0063

RULE TITLE: Supplemental Review

RULE SUMMARY: This new rule adds an option for the supplemental review and provides the process to follow for Interconnection Application Review.

RULE TEXT:

(1) To accept the offer of a supplemental review, the applicant must submit a signed copy of the Supplemental Review Agreement and pay a supplemental review fee of \$1,000, both within 10 business days of the offer. If the written agreement and fee have not been received within that timeframe, the Application will be deemed withdrawn unless the applicant has notified the public utility that they wish to continue being evaluated under the Tier 4 review procedures.

(2) Within 20 business days of an applicant's election to undergo supplemental review, the public utility must perform supplemental review using the screens set forth below, notify the applicant of the results, and include with the notification a written report of the analysis and data underlying the public utility's determinations under the screens.

(a) Supplemental Review Penetration Screen: Where 12 months of line section minimum load data (including onsite load, but not station service load served by the proposed small generator facility) are available, can be calculated, can be estimated from existing data, or can be determined from a power flow model, the aggregate export capacity on the feeder or line section is less than 100 percent of the relevant minimum load on the feeder. If minimum load data are not available, or cannot be calculated, estimated, or determined, the aggregated export capacity on the line section is less than 30 percent of the peak load for all line Sections bounded by automatic sectionalizing devices upstream of the proposed project.

(A) Load that is co-located with load-following, non-exporting, or export-limited projects should be appropriately accounted for. The public utility may take the impacts of non-export or export limited generation on the calculation of daytime minimum load when evaluating potential system impacts.

(B) The interconnecting public utility will not consider as part of the aggregate export capacity for purposes of this screen the export capacity of generators known to be already reflected in the minimum load data, including combined heat and power (CHP) facility capacity.

(b) Voltage and Power Quality Screen. In aggregate with existing generation on the line section:

(A) The voltage regulation on the line section can be maintained in compliance with relevant requirements under all system conditions;

(B) The voltage fluctuation is within acceptable limits as defined by IEEE Std 1547™;

(C) The harmonic levels meet IEEE 1547 limits at the Point of Interconnection; and

(D) Substation transformer backfeed screen. Where existing protective devices and equipment cannot adequately support backfeed, the aggregated export capacity on the substation transformer must be less than 80 percent of the relevant minimum load for the substation transformer.

(E) Supplemental Grounding Screen: If the project failed the Line Configuration Screen, apply the Supplemental Grounding Screen in paragraphs (F) -(H). If the project limits export pursuant to OAR 860-082-0033, the export capacity must be included in any analysis including power flow simulations.

(F) For projects with a rotating machine, if effective grounding is maintained, the project passes the screen.

(G) For projects with a three-phase inverter, apply one of the following screens:

(i) If the line-to-neutral connected load on the feeder or line section is greater than 33 percent of peak load on the feeder or line-section, the project passes the screen.

(ii) If using a supplemental grounding software tool:

(I) If the tool determines that supplemental grounding is not required to maintain effective grounding, the project passes this screen.

(II) If the tool determines that supplemental grounding is required, the applicant must agree to modify the project to include supplemental grounding. If the applicant does not agree to modify the project, the project fails this screen.

(H) If using detailed hosting capacity analysis that incorporates evaluation of temporary overvoltage risk for inverters, the project passes the screen if the nameplate rating of the project is below the available hosting capacity at the Point of Interconnection.

(c) Safety and Reliability Screen. The location of the proposed small generator facility and the aggregate export capacity on the line section do not create impacts to safety or reliability that cannot be adequately addressed without application of the study process. If the project limits export pursuant to OAR 860-082-0033, the export capacity must be included in any analysis, including power flow simulations, except when assessing fault current contribution. To assess fault current contribution, the analysis must use the rated fault current; for example, the applicant may provide manufacturer test data (pursuant the fault current test described in IEEE 1547.1-2020 clause 5.18) showing that the fault current is independent of the nameplate rating. The interconnecting public utility may consider the following factors and others in determining potential impacts to safety and reliability in applying this screen:

(A) Whether the line section has significant minimum loading levels dominated by a small number of customers (i.e., several large commercial customers).

(B) Whether the loading along the line section is uniform or even.

(C) Whether the project is located in close proximity to the substation (i.e., less than 2.5 electrical circuit miles), and whether the line section from the substation to the Point of Interconnection is a Mainline rated for normal and emergency ampacity.

- (D) Whether the project incorporates an adjustable time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time.
- (E) Whether operational flexibility is reduced by the project, such that transfer of the line section(s) of the Project to a neighboring distribution circuit/substation may trigger overloads or voltage issues.
- (F) Whether the project employs equipment or systems certified by a recognized standards organization to address technical issues such as, but not limited to, islanding, reverse power flow, or voltage quality.
- (3) If the proposed interconnection passes the supplemental screens, the Application must be approved and the public utility will provide the applicant an executed Interconnection Agreement pursuant to the procedure set forth in OAR 860-082-0025(7)(e).
- (4) After receiving an Interconnection Agreement executed by the public utility, the applicant must proceed under the terms of the applicable level of review under which the Application was initially studied.
- (5) Applicants undergoing Supplemental Review will be able to access, review, and verify minimum load calculations except in cases where the minimum load data contain identifiable individual customer data.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757
STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0065

RULE TITLE: Recordkeeping and Reporting Requirements

RULE SUMMARY: A housekeeping change was made to this rule.

RULE TEXT:

(1) The public utility must maintain a record of the following information for at least two years:

(a) The number of complete small generator interconnection applications received;

(b) The time required to complete the review process for each application; and

(c) The reasons for the approval or denial of each application.

(2) For as long as an interconnection customer's small generator facility is interconnected to a public utility's transmission or distribution system, the interconnecting public utility must maintain copies of the interconnection application, interconnection agreement, and certificate of completion for the small generator facility. The public utility must provide a copy of the interconnection customer's records to the interconnection customer within 15 business days after receipt of a written request.

(3) The public utility must submit an annual report to the Commission summarizing the public utility's interconnection activities for the previous calendar year. The annual report must be filed by May 30 and must include the following information:

(a) The number of complete small generator interconnection applications received;

(b) The number of small generator facility interconnections completed;

(c) The types of small generator facilities applying for interconnection and the nameplate rating of the facilities;

(d) The location of completed and proposed small generator facilities by zip code;

(e) For each Tier 3 and Tier 4 small generator interconnection approval, the basic telemetry configuration, if applicable; and

(f) For each Tier 4 small generator interconnection approval:

(A) The interconnection facilities required to accommodate the interconnection of a small generator facility and the estimated costs of those facilities; and

(B) The system upgrades required to accommodate the interconnection of a small generator facility and the estimated costs of those upgrades.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060

AMEND: 860-082-0070

RULE TITLE: Metering and Monitoring

RULE SUMMARY: The rule changes are housekeeping.

RULE TEXT:

(1) The public utility must install, maintain, test, repair, operate, and replace any metering and data acquisition equipment necessary under the terms of the public utility's interconnection agreement, power purchase agreement, or power service agreement with an applicant or interconnection customer. The applicant or interconnection customer is responsible for all reasonable costs associated with the metering and data acquisition equipment. The public utility and the applicant or interconnection customer must have unrestricted access to such equipment as necessary to conduct routine business or respond to an emergency.

(2) Except as provided in subsection 3(b), a public utility may not require an applicant or interconnection customer with a small generator facility with a nameplate rating of less than three megawatts to provide or pay for the data acquisition or telemetry equipment necessary to allow the public utility to remotely monitor the small generator facility's electric output.

(3) At its discretion, a public utility may require an applicant or interconnection customer to pay for the purchase, installation, operation, and maintenance of the data acquisition or telemetry equipment necessary to allow the public utility to remotely monitor the small generator facility's electric output if:

(a) The small generator facility has a nameplate rating greater than or equal to 3 megawatts; or

(b) The small generator facility meets the criteria in OAR 860-082-0055(1) for Tier 3 interconnection review and the aggregated nameplate rating on the circuit exceeds 50 percent of the line section annual peak load.

(4) A public utility and an applicant or interconnection customer may agree to waive or modify the telemetry requirements in this rule.

(5) Telemetry Requirements.

(a) The communication must take place via a private network link using a frame relay, fractional T-1 line, or other suitable device. Dedicated remote terminal units from the interconnected small generator facility to a public utility's substation and energy management system are not required.

(b) A single communication circuit from the small generator facility to the public utility is sufficient.

(c) Communications protocol must be DNP 3.0 or another reasonable standard used by the public utility.

(d) The small generator facility must be capable of sending telemetric monitoring data to the public utility at a minimum rate of every two seconds from the output of the small generator facility's telemetry equipment to the public utility's energy management system.

(e) A small generator facility must provide the following minimum data to the public utility:

(A) Net real power flowing out or into the small generator facility (analog);

(B) Net reactive power flowing out or into the small generator facility (analog);

(C) Bus bar voltage at the point of common coupling (analog);

(D) Data processing gateway heartbeat (used to certify the telemetric signal quality); and

(E) On-line or off-line status (digital).

(f) If an applicant or interconnection customer operates the equipment associated with the high voltage switchyard interconnecting the small generator facility to the transmission or distribution system and is required to provide monitoring and telemetry, then the interconnection customer must provide the following data to the public utility in addition to the data in subsection (e):

(A) Switchyard line and transformer megawatt and mega volt ampere reactive values;

(B) Switchyard bus voltage; and

(C) Switching device status.

STATUTORY/OTHER AUTHORITY: ORS 183, ORS 756, ORS 757

STATUTES/OTHER IMPLEMENTED: ORS 756.040, ORS 756.060