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Summary of Staff's Division 82 Proposal

This is a summary of Staff's Division proposal which will be presented at the March 15, 2023, workshop. Staff intends to provide a similar set of documents for the March 28 workshop that will address Division 39, the net-metering rules. Staff has included three documents in addition to this summary. They are as follows:

1. Redlined Division 82 rules – this is a red-lined document showing the changes from the current Division 82 with Staff's proposal.
2. Positions summary matrix – this is an excel file that highlights the differences in parties' positions on changes to make in the Division 82 rules.
    a. Non-exhaustive list of issues, captures the important ones
    b. Contains tabs for different subsections
    c. Compares definitions between Division 82 and 39
        i. Definitions at top are edited from current rules, or IREC proposal
        ii. Definitions that follow include new proposals and comparisons

Approach

The scope of this phase of the rulemaking is to consider rule changes that incorporate:

- IEEE 1547-2018 standards
- Policies required to interconnect storage and hybrid resources (i.e. Export Controls)
- Modern screening practices, including the addition of supplemental review

Staff appreciates the broad range of policies for which parties were able to reach consensus on these high priority issues and incorporated those policies into its proposal. There was outreach to other stakeholders with some edits made to help clarify areas of concern identified.

Where there was disagreement on screening, IEEE, and storage-related policies Staff has attempted to choose approaches that will provide additional transparency and increase the ease of interconnection. This is also in line with state policy goals. In general, the approach is to accept proposals from IREC's BATRIES unless a reasonable safety or reliability risk was identified. The most important issues of disagreement are highlighted in the accompanying excel file and are not listed here. It is Staff's hope that with some additional discussion consensus may be reached on many of these issues as well. Areas where interconnection

problems cannot be addressed through engineering may be addressed in future phases through cost-allocation, or other approaches.

Interconnection Handbook

While working through the three topics in scope for the first phase, discussion touched on the need to put some policies in rule while others would make more sense in the utilities' Interconnection Handbooks. The Interconnection Handbooks are published by the utilities and provide a single, accessible resources for potential interconnection customers to understand all current interconnection requirements and practices, including those required by Oregon Administrative Rules and those at the discretion of the utility. This discussion also raised the need for compliance review of the Interconnection Handbooks following the proposed rule changes and revealed a desire for ongoing opportunities for Commission review changes to the handbooks. While the ongoing review of the entire engineering handbook is not in scope for this phase, Staff believes that it's important to perform a compliance review when these rules are effective and is supportive of an ongoing process for Commission review if changes made in the future raise concerns for stakeholders.

Process Changes

While slated for a later phase of this investigation, some process changes were proposed in this phase. In the spirit of taking advantage of easy wins, Staff considered whether proposed process changes could aid in the implementation of Phase 1 policies or otherwise add value at this stage without too much disagreement. Staff identified four basic categories of process changes for consideration:

1. Reflect consensus agreement
2. Needed to implement new policies in the scope for this phase
3. Processes identified in IREC's BATERIES (which may just help improve interconnection and may remove barriers specific to storage and hybrid resources)
4. Processes from IREC's model rules or FERC's SGIP that IREC identified as easy procedural improvements that will benefit all generator types if adopted now (not specific to policies in scope for this phase)

Staff incorporated changes that were necessary to implement the policies in scope for this phase. There are some changes that parties have raised objections to, that were incorporated, nevertheless. In one such example, IREC proposed that after passing the fast-track screens, the utility provide a signed copy of the interconnection agreement with the screen results:

> If the proposed interconnection passes the screens, the public utility shall provide the applicant with a copy of the Tier 1 application form, signed by the public utility, forming the Tier 1 interconnection agreement, at the time the screen results are provided

Objections were raised here to the process change; Staff's approach was to align the timing with current rules:

> If the proposed interconnection passes the screens, the public utility shall provide the applicant with a copy of the Tier 1 application form, no later than five business days after approval, signed by the public utility, forming the Tier 1 interconnection agreement, ~~at the time the screen results are provided~~.

This change is in line with the requirements currently in 860-082-0025(7)(e):

> A public utility must provide an executable interconnection agreement no later than five business days after the date of approval of an interconnection application

Staff believes changes like this are appropriate at this time to incorporate requirements for the new sections.

For changes from BATTRIES, IREC's model rules, and FERC's SGIP, Staff is generally in favor of saving those issues for subsequent phases where process improvements will be addressed. However, Staff identified a few very easy wins that it is comfortable incorporating now and would incorporate additional process changes if there is consensus or they support the incorporation of IEEE 1547-2018 standards or storage and hybrid resources.

One of the process changes Staff included is that the utility will be required to provide an executed interconnection agreement, as opposed to an executable interconnection agreement. This also seems to be a reasonable change that will help address issues of concern in Docket UM 2111.

Another change that is related to timelines is the use of "Certificate of Completion" instead of "scheduled commissioning" when discussing approach for Witness test. Staff believes use of certificate of completion (a defined term) is appropriate in this instance. The current requirements are:

> The public utility has the option of conducting a witness test at a mutually agreeable time within 10 business days of the scheduled commissioning.

Staff's proposal is:

> 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.

This requirement will provide additional clarity for stakeholders. Additionally, the following subsections rely on certificate of completion, not scheduled commissioning.

Aligning NEM and SGIP

As discussed in the workshops, Staff believes one set of interconnection rules that would be applicable to generators whether they are NEM, or small generators would be preferable. To help facilitate this Staff is proposing some steps at this time. One step to align the rules is a common set of definitions. Given that, Staff's proposal combines the definitions from Divisions 39 and 82. Addressing the definitions at this point should help with that endeavor in the future.

Areas of Consensus

Staff believes through the process there have been several areas of consensus. These include the adoption of both Export Controls and Supplemental Review processes. While there are some areas of contention within the two new sections, parties overall seem to approve of the direction taken here.

Tier 1:

1. Single-phase Shared Secondary Screen
2. Service Imbalance Screen
3. Approval despite screen failure
4. Process after screen failure
5. Applicant options meeting.
6. Penetration Screen (dependent on IREC current compromise position, may change)

Tier 2:

1. Eligibility
2. Connections allowed
3. Fault Current Screen.
4. Short-Circuit Interrupting Capability Screen.
5. Transient Stability Screen
6. Single-phase Shared Secondary Screen
7. Inadvertent Export Screen
8. Approval despite screen failure
9. Process after screen failure
10. Applicant options meeting (Staff added an opportunity for applicants to redesignate the RPA if it initially failed, at the applicant's option meeting, and concerns could impact listing this as a consensus issue.)
11. Penetration Screen (dependent on IREC current compromise position, may change)

Tier 3:

1. Eligibility
2. Approval criteria (Staff believes this is a consensus issue, but would like to verify)
3. Approval despite screen failure
4. Process after screen failure
5. Applicant options meeting (Staff added an opportunity for applicants to redesignate the RPA if it initially failed, at the applicant's option meeting, and concerns could impact listing this as a consensus issue.)

Construction:

1. Minimum operating requirements

There are likely other areas of consensus that Staff has not identified, and the possibility that the list above has some areas that are not consensus. This will be part of the discussion at the March 15 workshop.

Next Steps

Staff intends to provide a similar markup of Division 39 rules for the March 28 workshop. Following that there will be an opportunity for stakeholder comments, with an updated Staff proposal following initial comments. Depending on stakeholders' preference there could be a second round of comments as well, with Staff again incorporating feedback in a final Staff proposal. This final proposal would be presented at a public meeting to open a formal rulemaking process.

Staff is open to additional workshops to discuss comments and any updated proposals if Stakeholders would find it beneficial. The process going forward will be part of the March 15 workshop.

As always, Staff appreciates stakeholders taking the time and effort to participate in this docket and discussion.

For any questions or concerns please contact:

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Staff proposal Oregon Small Generator Interconnection Rules

860-082-0005 Scope and Applicability

860-082-0010 Waiver

860-082-0015 Definitions

860-082-0020 Pre-Application Process

860-082-0025 Applications to Interconnect a Small Generator Facility

860-082-0030 Construction, Operation, Maintenance, and Testing of Small Generator Facilities

860-082-003X Export Controls

860-082-0035 Cost Responsibility

860-082-0040 Insurance

860-082-0045 Tier 1 Interconnection Review

860-082-0050 Tier 2 Interconnection Review

860-082-0055 Tier 3 Interconnection Review

860-082-0060 Tier 4 Interconnection Review

860-082-006X Supplemental Review

860-082-0065 Recordkeeping and Reporting Requirements

860-082-0070 Metering and Monitoring

860-082-0075 Temporary Disconnection

860-082-0080 Arbitration of Disputes

860-082-0085 Complaints for Enforcement

860-082-0005 Scope and Applicability

(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 capacity 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). These rules do not apply to the interconnection of a net metering facility to a public utility that meets the requirements of ORS 757.300(9).

(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 interconnecting 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 interconnecting public utility no later than 60 business days before the date that the small generator interconnection rules become applicable.

(3) The small generator interconnection rules do not apply to the interconnection of a net metering facility, which is governed by OAR chapter 860, 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0010
Waiver

(1) Upon request or its own motion, the Commission may waive any of the Division 082 rules for good cause shown. A request for waiver must be made in writing, unless otherwise allowed by the Commission.

(2) A public utility and an applicant or interconnection customer may agree to reasonable extensions to the required timelines in these rules without requesting a waiver from the Commission.

(a) If a public utility and an applicant or interconnection customer are unable to agree to waive a timeline, then the public utility, applicant, or interconnection customer may request that the Commission grant a waiver.

(b) In deciding whether to grant a waiver of a timeline, the Commission will consider the number of pending applications for interconnection review and the type of applications, including review level, facility type, and facility size.

(c) Waiver of a timeline, whether by agreement or Commission order, does not affect an application's queue position.

Statutory/Other Authority: ORS 183, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 6-2011, f. & cert. ef. 9-14-11
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0015
Definitions

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

(4) "Aggregated nameplate capacity" means the total combined nameplate capacity of: A proposed DER;
   (a) A proposed DER;
   (b) Existing DERs, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate capacity greater than 10 megawatts; and
   (c) DER, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate capacity greater than 10 megawatts that have pending completed applications with higher queue positions than the proposed small generator facility.

(5) "ANSI C12.1 standards" means the standards prescribed by the 2001 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 July 9, 2001.

(6) "Applicant" means a person who has submitted an application to interconnect

(a) A DER to a public utility's transmission or distribution system, or

(b) A net metering facility to an electric distribution system.

(7) "Application" means a written request to interconnect a DER with a public utility's transmission or distribution system, and must follow the standard form applications developed by the public utility and approved by the Commission

(8) "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.

(9) "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, any required witness tests are complete, and 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.

(10) "Distributed energy resource" or "DER" is a type of small generator, and means the equipment used by an interconnection customer to generate and/or store electricity that operates in parallel with the electric distribution system. A DER may include but is not limited to an electric generator and/or energy storage system, a prime mover, or combination of technologies with the capability of injecting power and energy into the electric distribution system, which also includes the interconnection equipment required to safely interconnect the facility with the distribution system.

(11) "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.

(12) "Energy storage system" or "ESS" 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 Interconnection Procedures, an ESS can be considered part of a DER or a DER in whole that operates in parallel with the distribution system.

(13) "Export capacity" means the amount of power that can be transferred from the DER to the distribution system. Export capacity is either the nameplate rating, or a lower amount if limited using an acceptable means identified in OAR 860-082-003X.

(14) "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.

(15) "Field-tested equipment" means interconnection equipment that is identical to equipment

that was approved by the interconnecting public utility for a different DER 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.

(16) "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.

(17) "Host load" means electrical power, less the DER auxiliary load, consumed by the customer at the location where the DER is connected.

(18) "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.

(19) "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.

(20) "Inadvertent export" means the unscheduled export of active power from a DER, exceeding a specified magnitude and for a limited duration, generally due to fluctuations in load-following behavior.

(21) "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

(22) "Interconnection customer" means a person with one or more DER interconnected to a public utility's transmission or distribution system.

(23) "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.

(24) "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.

(25) "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.

(26) "Interconnection service" means service provided by an interconnecting public utility to an interconnection customer.

(27) "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.

(28) "Limited export" means the exporting capability of a DER whose export capacity is limited by the use of any configuration or operating mode described in OAR 860-082-003X.

(29) "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.

(30) "Minor equipment modification" means a change to a DER 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 DER of 10 percent or less provided that a change made to a DER with a pending completed application must not adversely impact lower queued projects; 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 utility of minor equipment modifications.

(31) "Nameplate capacity" means the full-load electrical quantities assigned by a facility's designer to a generator and its prime mover or other piece of electrical equipment, such as transformers and circuit breakers, under standardized conditions, as expressed in amperes, kilovoltamperes, kilowatts, volts, megawatts, or other appropriate units. Nameplate capacity is usually indicated on a nameplate attached to the individual device.

(32) "Nameplate rating" means the sum total of maximum rated power output of all of a DER's constituent generating units and/or ESS as identified on the manufacturer nameplate in Alternating Current (AC), regardless of whether it is limited by any approved means.

(33) “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.

(34) “Net metering facility” has the meaning set forth in ORS 757.300(1)(d).

(35) “Non-export or non-exporting” means when the DER is sized and designed, and operated using any of the methods in OAR 860-082-003X, such that the output is used for host load only and no electrical energy (except for any Inadvertent Export) is transferred from the DER to the distribution system.

(36) "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 (s) of this rule.

(37) “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.

(38) “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.

(39) “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.

(40) “Power control system” or “PCS” means systems or devices which electronically limit or control steady state currents to a programmable limit.

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

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

(43) “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.

(44) “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.

(45) “Relevant minimum load” means the lowest measured load coincident with the generating facility’s production. For solar-only facilities this shall be the daytime minimum load.

(46) "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.

(47) "Scoping meeting" means an initial meeting between representatives of an applicant and an interconnecting public utility that is conducted to discuss the reference point of applicability; 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.

(48) "Secondary line" means a service line with an operating voltage of 600 volts or less.

(49) "Small generator facility" means a facility for the production of electrical energy that has a nameplate capacity of 10 megawatts or less. A small generator facility does not include interconnection equipment, interconnection facilities, or system upgrades.

(50) "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.

(51) "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.

(52) "Transmission line" means any electric line operating at or above 50,000 volts.

(53) "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.

(54) "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 DER evaluation according to IEEE 1547 as applicable to the specific interconnection equipment used.

(55) "Written notice" means a notice required by the small generator interconnection rules sent via First Class United States mail. The duty to provide written notice is deemed fulfilled on the day that the notice is deposited in the mail. A public utility and an applicant or interconnection customer may agree in writing to accept written notice via electronic mail. If using electronic mail by agreement, then the duty to provide written notice is deemed fulfilled on the day the notice is sent. A public utility and an applicant or interconnection customer are responsible for informing one another of changes to the physical or electronic address used to receive notifications.

Statutory/Other Authority: ORS 183, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0020
Pre-Application Process

(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 potential DER 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0025
Applications to Interconnect a Small Generator Facility

(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 DER 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 capacity 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 capacity 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 before the expiration of the interconnection agreement between the interconnection customer and the interconnecting` 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. 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 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 may use the Tier 1 application form only for DER that meet 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 DER 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 capacity for all of the DER. If the combined total nameplate capacity 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 DER 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. 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 reference point of applicability 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 shall 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 requires no construction of facilities by the public utility, or the public utility approves the proposed interconnection despite screen failure or at the applicant options meeting the public utility must provide the applicant an executed interconnection agreement no later than five business days after the applicant options meeting, providing supplemental review screen results, or completing the last tier 4 study. If the applicant does not return a countersigned interconnection agreement 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 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0030
Construction, Operation, Maintenance, and Testing of Small Generator Facilities

(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. For purposes of OAR 860-082-0030, capitalized terms not otherwise defined in Division 082 have the meaning set forth in IEEE 1547-2018.

(a) Applications to interconnect new DERs submitted on or after January 1, 2024, or a later date set by Commission order, shall comply with IEEE 1547-2018. Applications submitted before July 1, 2023 that are reviewed under Tier 4 or supplemental review may, but are not required to, comply with IEEE 1547-2018. DERs compliant with IEEE 1547-2018 shall conform with the following minimum requirements:

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

(B) Normal performance requirements: Inverter-based DERs must meet reactive power requirements of IEEE 1547-2018 Category B. Rotating DERs must meet Category A, and may meet Category B.

(C) Inverter-based interconnection equipment shall be tested to and certified as being compliant with UL 1741 Third Edition, Supplement SB, by a Nationally Recognized Test Laboratory (NRTL). Equipment that is not certified by a NRTL may require additional evaluation and commissioning testing to confirm compliance with IEEE 1547-2018.

(b) Interconnection requirements handbook. Each public utility shall post an interconnection requirements handbook on its public website. Interconnection requirements handbooks shall be filed with the commission for public notice and comment, and commission approval by September 1, 2023. Subsequent changes to interconnection requirements handbooks shall also be filed with the commission for public notice and comment and commission approval

(c) Preferred default settings. A public utility shall allow DERs to interconnect using 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 shall include preferred default settings. For DERs compliant with IEEE 1547-2018 before July 1, 2023, these settings shall be determined by mutual agreement between the public utility and applicant. As applicable, the following shall 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, but can be a term mutually agreed upon between the interconnecting utility and customer.

(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 interconnecting public utility.

(a) For DER 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 DER 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 interconnecting 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 interconnecting public utility upon request.

Statutory/Other Authority: ORS 183, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-003X
Export Controls

(1) If a DER uses any configuration or operating mode in subsection (3) to limit the export of electrical power across the Point of Interconnection, then the Export Capacity shall be 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 DER must comply with the limits identified in this Section. 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 shall include proposed control and/or protection settings.
(3) Acceptable Export Control Methods
  (a) Export Control Methods for Non-Exporting DER
    (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 shall be 0.1% (export) of the service transformer's nominal base 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 utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing.

(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 shall be 5% (import) of the DER'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 utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing.

(C) Relative Distributed Energy Resource Rating: Upon utility agreement, this option requires the DER'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 DER's Nameplate Rating to be no greater than 50% 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 DER

(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 shall be the Export Capacity value, with a maximum 2.0 second time delay to limit Inadvertent Export.

(B) Configured Power Rating: A reduced output power rating utilizing the power rating configuration setting may be used to ensure the DER 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 DER 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 DER or Limited Export DER

(A) Certified Power Control Systems: DER may use certified power control systems to limit export. DER utilizing this option must use a power control system and inverter certified per UL 1741 by a nationally recognized testing laboratory (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 shall 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: DER 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.

860-082-0035
Cost Responsibility

(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 $1000, 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0040
Insurance

(1) A public utility may not require an applicant or an interconnection customer with a small generator facility with a nameplate capacity 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 capacity 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0045
Tier 1 Interconnection Review

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

(a) The DER 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 DER 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 DER meets the approval criteria in subsections (a) through (e). A public utility may not impose different or additional approval criteria.

(a) A Tier 1 DER 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 DER) 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 DER;

(B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed DER) 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 DER within a spot network, the aggregate nameplate rating including the DER's nameplate rating may not exceed 50 percent of the spot network or area network's anticipated minimum load. If solar energy generating facilities are used exclusively, only the anticipated daytime minimum load shall be considered. The public utility may select any of the following methods to determine anticipated minimum load:

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

(B) five percent of the spot network or area 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 DER 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 DER to the center tap neutral of a 240-volt service line, the addition of the DER must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate 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 receipt of an application, the interconnection will be deemed approved.

(4) Interconnection after passing screens. If the proposed interconnection passes the screens, the public utility shall provide the applicant with a copy of the Tier 1 application form, no later than five business days after approval, signed by the public utility, forming the Tier 1 interconnection agreement, at the time the screen results are provided. If the public utility does not notify an applicant whether an application is approved or denied in writing within twenty business days after notification of the Tier 1 review results, the interconnection agreement signed by the applicant as part of the Tier 1 application shall be deemed effective.

(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 DER 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 DER 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)Specific information on the reason(s) for failure in writing using a standard format approved by the Commission,

(b) An executable Supplementary 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 860-082-006X;

(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. At the time the public utility notifies the applicant of the Tier 1 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications, opportunity to designate a different RPA, or the screen analysis and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.

(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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0050
Tier 2 Interconnection Review

(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 DER that meets the following requirements:

(a) The DER does not qualify for the Tier 1 interconnection review;

(b) If the DER is inverter-based, the DER's export capacity does not exceed the limits identified in the table below, which vary according to the voltage of the line at the proposed point of interconnection.

Line Voltage	Export Capacity for Tier 2 Eligibility	
	Regardless of location	On > 600 amp line and < 2.5 miles from substation
< 5 kV	< 1 MW	< 2 MW
5 kV – 14 kV	< 2 MW	< 3 MW
15 kV – 30 kV	< 3 MW	< 4 MW
31 kV – 69 kV	< 4 MW	< 5 MW

DER located within 2.5 miles of a substation and on a main distribution line with minimum 600-amp capacity are eligible for Tier 2 interconnection under higher thresholds;

(c) If the DER is not inverter-based, the DER's export capacity is two megawatts or less;

(d) The DER must not interconnect to a transmission line, or area network; and

(e) The DER 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 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 DER 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 DER) 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 DER;

(B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed DER) 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 DER within a spot network, the DER must be inverter-based and use a minimum import relay or other protective scheme that will ensure that power imported from the public utility to the network will, during normal public utility operations remain above one percent of the network’s maximum load over the past year or will remain above a point reasonably set by the public utility in good faith. At the public utility’s discretion, the requirement for minimum import relays or other protective schemes may be waived.

(d) Fault Current Screen. The DER, 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 DER, aggregated with other generation 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 DER’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 DER's nameplate rating, in aggregate with other DERs interconnected to the distribution side of a substation transformer feeding the circuit where the DER 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.

If the small generator facility interconnection is to a primary line on the distribution system, then the interconnection must meet the following criteria:

(A) If the small generator facility is three-phase or single-phase and will be connected to a three-phase, three-wire primary line, then the small generator facility must be connected phase-to-phase.

(B) If the small generator facility is three-phase or single-phase and will be connected to a three-phase, four-wire primary line, then the small generator facility must be connected line-to-neutral and effectively grounded.

(h) Single-Phase Shared Secondary Screen. For interconnection of a DER 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 DER to the center tap neutral of a 240-volt service line, the addition of the DER must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate rating of the service transformer.

(j) Except as provided in subsection (2)(l), the interconnection of the DER 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 DER must not be a synchronous machine. If the DER is a synchronous machine, then the applicant must submit a Tier 4 application.

(l) Inadvertent Export Screen. For interconnection of a proposed DER 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 following formula:

$$\frac{(\mathbf{R_{SOURCE}} \times \Delta\mathbf{P}) - (\mathbf{X_{SOURCE}} \times \Delta\mathbf{Q})}{\mathbf{V^2}}$$

Where:

$$\Delta \mathbf{P} = (\mathbf{DER\ apparent\ power\ Nameplate\ Rating} - \mathbf{Export\ Capacity}) \times \mathbf{PF},$$

$$\Delta \mathbf{Q} = (\mathbf{DER\ apparent\ power\ Nameplate\ Rating} - \mathbf{Export\ Capacity}) \times \sqrt{(\mathbf{1} - \mathbf{PF^2})},$$

$\mathbf{R_{SOURCE}}$ **is the grid resistance,** $\mathbf{X_{SOURCE}}$ **is the grid reactance,**
V is the grid voltage, PF is the power factor

(3) Timelines. In addition to the timelines and requirements in OAR 860-082-0025, and if a net metering facility OAR 860-039, the following timelines and requirements apply to Tier 2 interconnection reviews:

(a) 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 shall provide the applicant an executed interconnection agreement within five days of the screen results. 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 DER 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 DER 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)Specific information on the reason(s) for failure in writing using a standard format approved by the Commission,

(b) An executable Supplementary 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 860-082-006X;

(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. At the time the public utility notifies the applicant of the Tier 2 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications or the screen analysis, opportunity to designate a different RPA, and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.

(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 (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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0055
Tier 3 Interconnection Review

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

(a) The DER must have a nameplate capacity of 10 megawatts or less;

(b) The DER must not be connected to a transmission line;

(c) The DER must not export power beyond the point of interconnection; and

(d) The DER 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 DER under the Tier 3 interconnection review procedures if the DER 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 DER 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 DER must be 50 kilowatts or less;

(B) The DER 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 DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.

(b) For a DER 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 DER's point of interconnection must be to a radial distribution circuit;

(C) The DER must not be served by a shared transformer;

(D) Except as allowed in subsection (2)(c), the interconnection of the DER 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 DER must not be a synchronous machine. If the DER is a synchronous machine, then the applicant must submit a Tier 4 application.

(c) If the DER fails to meet one or more of the Tier 3 approval requirements, but the public utility determines that the DER 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 ~~public utility and 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 shall provide the applicant an executed interconnection agreement within five days of the screen results. 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 DER 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 shall provide the applicant with:

(a)Specific information on the reason(s) for failure in writing using a standard format approved by the Commission,

(b) An executable Supplementary 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 860-082-006X;

(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. At the time the public utility notifies the applicant of the Tier 3 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications, opportunity to designate a different RPA, or the screen analysis and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.

(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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0060
Tier 4 Interconnection Review

(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 DER meeting the following:

(a) The small generator facility must have a nameplate capacity 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 shall transfer of 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 shall 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 shall 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 send the applicant an executed interconnection agreement within 15 business days of the scoping meeting if:

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

(B) The interconnection of the DER 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 DER 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 DER. In determining possible adverse system impacts, the public utility must consider the aggregated nameplate rating and export capacity 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 DER 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 DER 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 system impact study shall be completed within 30 business days of the applicant's delivery of the executed system impact study agreement.

(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 DER if no modifications to the DER 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. The system impact study must take into account the proposed DER's design and operating characteristics, including but not limited to the proposed operating profile, and study the DER according to how it is proposed to be operated. If the DER limits export pursuant to OAR 860-082-003X, 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; for example, the customer may provide 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.

(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 DER, 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.

(l) If the public utility determines that no interconnection facilities or system upgrades are required and that the DER 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.

(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 facilities study shall be completed within 45 business days of the applicant’s delivery of the executed facilities study agreement.

(e) The facilities study must identify the interconnection facilities and system upgrades required to safely interconnect the DER 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 DER 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-006X
Supplemental Review

(1) To accept the offer of a Supplemental Review, the Applicant shall submit a signed copy of the Supplementary Review Agreement and pay a Supplemental Review fee of $1,000, both within ten (10) Business days of the offer. If the written agreement and fee have not been received within that timeframe, the Application shall be deemed withdrawn unless the Applicant has notified the Utility that they wish to continue being evaluated under the Tier 4 review procedures.

(2) Within twenty (20) Business Days an Applicant's election to undergo Supplemental Review, the Utility shall 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 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 DER) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Export Capacity on the feeder or line section is less than 100 percent of the minimum load on the feeder. If minimum load data is not available, or cannot be calculated, estimated, or determined, the Export Capacity of the Project, aggregated with the Export Capacity of other Projects 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) The type of Project used by the proposed Project will be taken into account when calculating, estimating, or determining circuit or Line Section minimum load relevant for the application this screen. Solar photovoltaic (PV) Projects with no battery storage use daytime minimum load (i.e. 10 a.m. to 4 p.m. for fixed panel systems and 8 a.m. to 6 p.m. for PV systems utilizing tracking systems), while all other Projects use absolute minimum load.

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

(C) The Interconnecting Utility will not consider as part of the aggregate Export Capacity for purposes of this screen Project Export Capacity, including combined heat and power (CHP) facility capacity and behind-the-meter or net-metered capacity, known to be already reflected in the minimum load data.

(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 Std 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 this Supplemental Grounding Screen:

ii. For Projects with a rotating machine, if effective grounding is maintained the Project passes the screen.

iii. 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% of peak load on the feeder or line-section, the Project passes the screen.

II. If using a supplemental grounding software tool:

1. If the tool determines that supplemental grounding is not required to maintain effective grounding, the Project passes this screen.

2. 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.

iv. 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 DER 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 860-082-003X, 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 Interconnection Requestor 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 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 shall be approved and the Utility will provide the Applicant an executable Interconnection Agreement pursuant to the procedure set forth in OAR 860-082-0025(7)(e).

(4) After receiving an Interconnection Agreement executed by the Utility, the Applicant shall 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 contains identifiable individual customer data

860-082-0065
Recordkeeping and Reporting Requirements

(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 DER applying for interconnection and the nameplate capacity of the facilities;

(d) The location of completed and proposed DER 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0070
Metering and Monitoring

(l) 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 capacity 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 capacity 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 generation 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, 756 & 757
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0075
Temporary Disconnection

(1) Under emergency conditions, a public utility or an interconnection customer may suspend interconnection service and temporarily disconnect a small generator facility from the public utility's transmission or distribution system at any time and for as long as reasonably necessary.

(a) A public utility must notify an interconnection customer immediately after becoming aware of an emergency condition that may reasonably be expected to affect a small generator facility's operation. To the extent possible, the notice must describe the emergency condition, the extent of the damage or deficiency, the expected effect on the small generator facility, the anticipated duration of the condition, and the necessary corrective action.

(b) An interconnection customer must notify the public utility immediately after becoming aware of an emergency condition that may reasonably be expected to affect the public utility's transmission or distribution system. To the extent possible, the notice must describe the

emergency condition, the extent of the damage or deficiency, the expected effect on the public utility's transmission or distribution system, the anticipated duration of the condition, and the necessary corrective action.

(2) A public utility or an interconnection customer may suspend interconnection service and temporarily disconnect a small generator facility to perform routine maintenance, construction, or repairs. A public utility or an interconnection customer must provide written notice five business days before suspending interconnection service or temporarily disconnecting the small generator facility. A public utility and an interconnection customer must use reasonable efforts to coordinate interruptions caused by routine maintenance, construction, or repairs.

(3) A public utility must use reasonable efforts to provide written notice to an interconnection customer affected by a forced outage of the public utility's transmission or distribution system at least five business days before the forced outage. If prior written notice is not given, then the public utility must provide the interconnection customer written documentation explaining the circumstances of the disconnection within five business days after the forced outage.

(4) A public utility may disconnect a small generator facility if the public utility determines that operation of the small generator facility will likely cause disruption or deterioration of service to other customers served by the public utility's transmission or distribution system, or if the public utility determines that operation of the small generator facility could cause damage to the public utility's transmission or distribution system.

(a) The public utility must provide written notice to the interconnection customer of the disconnection at least five business days before the disconnection. If the condition requiring disconnection can be remedied, then the public utility must describe the remedial action necessary.

(b) If requested by the interconnection customer, the public utility must provide documentation supporting the public utility's decision to disconnect.

(c) The public utility may disconnect the small generator facility if the interconnection customer fails to perform the remedial action identified in the notice of disconnection within a reasonable time, but no less than five business days after the interconnection customer received the notice of disconnection.

(5) A public utility may temporarily disconnect a small generator facility if an interconnection customer makes any change to the facility, other than a minor equipment modification, without the public utility's prior written authorization. The public utility may disconnect the small generator facility for the time necessary for the public utility to evaluate the affect of the change to the small generator facility on the public utility's transmission or distribution system.

(6) A public utility has the right to inspect an interconnection customer's small generator facility at reasonable hours and with reasonable prior written notice to the interconnection customer. If the public utility discovers that the small generator facility is not in compliance with the requirements of the small generator interconnection rules, then the public utility may require the interconnection customer to disconnect the small generator facility until compliance is achieved.

Statutory/Other Authority: ORS 183 & 756
Statutes/Other Implemented: ORS 756.040 & 756.060
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0080
Arbitration of Disputes

(1) An interconnecting public utility or an interconnection applicant may petition the Commission for arbitration of disputes arising during review of an application to interconnect a small generator facility or during negotiation of an interconnection agreement. If the public utility or the applicant petitions the Commission to arbitrate their dispute, then the Commission will use an administrative law judge (ALJ) as arbitrator unless workload constraints necessitate the use of an outside arbitrator.

(2) A petition for arbitration of an interconnection agreement must contain:

(a) A statement of all unresolved issues;

(b) A description of each party's position on the unresolved issues; and

(c) A proposed agreement addressing all issues, including those on which the parties have reached agreement and those that are in dispute.

(3) A petition for arbitration of a dispute arising during review of an application to interconnect a small generator facility must contain:

(a) A statement of all unresolved issues;

(b) A description of each party's position on the unresolved issues; and

(c) A proposed resolution for each unresolved issue.

(4) Respondent may file a response within 25 calendar days of the petition for arbitration. In the response, the respondent must address each issue listed in the petition, describe the respondent's position on those issues, and present any additional issues for which the respondent seeks resolution.

(5) The filing of a petition for arbitration of a dispute arising during review of an application to interconnect a small generator facility does not affect the application’s queue position.

(6) The arbitration is conducted in a manner similar to a contested case proceeding, and the arbitrator has the same authority to conduct the arbitration process as an ALJ has in conducting hearings under the Commission's rules, but the arbitration process is streamlined. The arbitrator holds an early conference to discuss processing of the case. The arbitrator establishes the schedule and decides whether an oral hearing is necessary. After the oral hearing or other procedures (for example, rounds of comments), each party submits its final proposed interconnection agreement or resolution of disputed issues. The arbitrator chooses between the two final offers. If neither offer is consistent with applicable statutes, Commission rules, and Commission policies, then the arbitrator will make a decision that meets those requirements.

(7) The arbitrator may allow formal discovery only to the extent deemed necessary. Parties are required to make good faith attempts to exchange information relevant to any disputed issue in an informal, voluntary, and prompt manner. Unresolved discovery disputes are resolved by the arbitrator upon request of a party. The arbitrator will order a party to provide information if the arbitrator determines the requesting party has a reasonable need for the requested information and that the request is not overly burdensome.

(8) Only the two negotiating parties have full party status. The arbitrator may confer with Commission staff for assistance throughout the arbitration process.

(9) To keep the process moving forward, appeals to the Commission are not allowed during the arbitration process. An arbitrator may certify a question to the Commission if the arbitrator believes it is necessary.

(10) To accommodate the need for flexibility, the arbitrator may use different procedures so long as the procedures are fair, treat the parties equitably, and substantially comply with the procedures listed here.

(11) The arbitrator must serve the arbitration decision on the interconnecting public utility and the interconnection applicant. The parties may file comments on the arbitration decision with the Commission within 10 calendar days after service.

(12) The Commission must accept, reject, or modify an arbitration decision within 30 calendar days after service of the decision.

(13) Within 14 calendar days after the Commission issues an order on a petition for arbitration of an interconnection agreement, the petitioner must prepare an interconnection agreement complying with the terms of the decision and serve it on respondent. Respondent must either sign and file the interconnection agreement or file objections to it within 10 calendar days of service of the agreement. If objections are filed, respondent must state how the interconnection agreement fails to comply with the Commission order and offer substitute language complying with the decision. The Commission must approve or reject a filed interconnection agreement within 20 calendar days of its filing or the agreement is deemed approved.

(14) If petitioner, without respondent's consent, fails to timely prepare and serve an interconnection agreement on respondent, respondent may file a motion requesting the Commission dismiss the petition for arbitration with prejudice. The Commission may grant such motion if the petitioner's failure to timely prepare and serve the interconnection agreement was the result of inexcusable neglect on the part of petitioner.

(15) The public utility and the applicant may agree to hire an outside arbitrator rather than file a petition with the Commission. The public utility and the applicant must share equally the costs of an outside arbitrator unless they mutually agree to a different payment arrangement.

Statutory/Other Authority: ORS 756
Statutes/Other Implemented: ORS 756.040 & 756.500
History:
PUC 10-2009, f. & cert. ef. 8-26-09

860-082-0085
Complaints for Enforcement

(1) This rule specifies the procedure for a public utility, an interconnection customer, or an applicant to file a complaint for the enforcement of an interconnection agreement. Filing dates for enforcement complaint proceedings are calculated and enforced per OAR 860-001-0150.

(2) At least 10 days prior to filing a complaint for enforcement, complainant must give written notice to defendant and the Commission that complainant intends to file a complaint for enforcement. The notice must identify the provisions in the agreement that complainant alleges were or are being violated and the specific acts or failure to act that caused or are causing the violation, and whether complainant anticipates requesting temporary or injunctive relief. On the same day the notice is filed with the Commission, complainant must serve a copy of the notice on defendant's authorized representative, attorney of record, or designated agent for service of process. Complainant must also serve the notice on all persons designated in the interconnection agreement to receive notices;

(3) A complaint for enforcement must:

(a) Contain a statement of specific facts demonstrating that the complainant conferred with defendant in good faith to resolve the dispute, and that despite those efforts the parties failed to resolve the dispute;

(b) Include a copy of the written notice, required by section (2), indicating that the complainant intends to file a complaint for enforcement;

(c) Include a copy of the interconnection agreement or the portion of the agreement that the complainant contends that defendant violated or is violating. If a copy of the entire agreement is provided, complainant must specify the provisions at issue;

(d) Contain a statement of the facts or law demonstrating defendant's failure to comply with the interconnection agreement and complainant's entitlement to relief. The statement must indicate that the remedy sought is consistent with the dispute resolution provisions in the agreement, if any. Statements of facts must be supported by written testimony with affidavits made by persons competent to testify and having personal knowledge of the relevant facts. Statements of law must be supported by appropriate citations. If exhibits are attached to the affidavits, the affidavits must contain the foundation for the exhibits;

(e) Designate up to three persons to receive copies of pleadings and documents;

(f) Include an executive summary, filed as a separate document not to exceed 8 pages, outlining the issues and relief requested; and

(g) Include any motions for affirmative relief, filed as a separate document and clearly marked. Nothing in this subsection precludes complainant from filing a motion subsequent to the filing of the complaint if the motion is based upon facts or circumstances unknown or unavailable to complainant at the time the complaint was filed.

(4) On the same day the complaint is filed with the Commission, complainant must serve a copy of the complaint on defendant's authorized representative, attorney of record, or designated agent for service of process. Service may be by telephonic facsimile, electronic mail, or overnight mail, but the complaint must arrive at defendant's location on the same day the complaint is filed with the Commission. Service by facsimile or electronic mail must be followed by a physical copy of the complaint the next day by overnight delivery.

(5) Within 10 business days after service of the complaint, defendant may file an answer with the Commission. Any allegations raised in the complaint and not addressed in the answer are deemed admitted. The answer must:

(a) Contain a statement of specific facts demonstrating that the defendant conferred with complainant in good faith to resolve the dispute and that despite those efforts the parties failed to resolve the dispute;

(b) Respond to each allegation in the complaint and set forth all affirmative defenses;

(c) Contain a statement of the facts or law supporting defendant's position. Statements of facts must be supported by written testimony with affidavits made by persons competent to testify and having personal knowledge of the relevant facts. Statements of law must be supported by appropriate citations. If exhibits are attached to the affidavits, then the affidavits must contain the foundation for the exhibits; and

(d) Designate up to three persons to receive copies of other pleadings and documents.

(6) On the same day as the answer is filed, the defendant must also file its response to any motion filed by complainant and its motions for affirmative relief. Each response and each motion must be filed as a separate filing. Nothing in this section precludes defendant from filing a motion subsequent to the filing of the answer if the motion is based upon facts or circumstances unknown or unavailable to defendant at the time the answer was filed.

(7) On the same day the answer is filed with the Commission, the defendant must serve a copy of the answer to the complainant's authorized representative, attorney of record, or designated agent for service of process.

(8) Complainant must file a reply to an answer that contains affirmative defenses within 5 business days after the answer is filed. On the same day the reply is filed with the Commission, complainant must serve a copy of the reply to defendant's authorized representative, attorney of record, or designated agent for service of process.

(9) A cross-complaint or counterclaim must be answered within the 10-business day time frame allowed for answers to complaints.

(10) The Commission will conduct a conference regarding each complaint for enforcement of an interconnection agreement.

(a) The administrative law judge (ALJ) schedules a conference within 5 business days after the answer is filed, to be held as soon as practicable. At the discretion of the ALJ, the conference may be conducted by telephone.

(b) Based on the complaint and the answer, all supporting documents filed by the parties, and the parties' oral statements at the conference, the ALJ determines whether the issues raised in the complaint can be determined on the pleadings and submissions without further proceedings or whether further proceedings are necessary. If further proceedings are necessary, the ALJ establishes a procedural schedule. Nothing in this subsection is intended to prohibit the bifurcation of issues where appropriate.

(c) In determining whether further proceedings are necessary, the ALJ must consider, at a minimum, the positions of the parties, the need to clarify evidence through the examination of witnesses, the complexity of the issues, the need for prompt resolution, and the completeness of the information presented.

(d) The ALJ may make oral rulings on the record during the conference on all matters relevant to the conduct of the proceeding.

(11) A party may file with the complaint or answer a request for discovery, stating the matters to be inquired into and their relationship to matters directly at issue.

(12) When warranted by the facts, the complainant or defendant may file a motion requesting that an expedited procedure be used. The moving party must file a proposed expedited procedural schedule along with its motion. The ALJ must schedule a conference to be held as soon as practicable to determine whether an expedited schedule is warranted.

(a) The ALJ will consider whether the issues raised in the complaint or answer involve a risk of imminent, irrevocable harm to a party or to the public interest.

(b) If a determination is made that an expedited procedure is warranted, the ALJ will establish a procedure that ensures a prompt resolution of the merits of the dispute, consistent with due process and other relevant considerations. The ALJ will consider, but is not bound by, the moving party’s proposed expedited procedural schedule.

(c) In general, the ALJ will not entertain a motion for expedited procedure where the dispute solely involves the payment of money.

1608184.5

Term	IREC Proposal	Notes	Staff Proposal
Certificate of Completion	"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, ~~and has been inspected~~, any required witness tests are completed, and 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.	Proposal removes the requirement that the facility has been inspected. This condition is related to the authority holding jurisdiction - Staff's proposal tries to offer additional clarity. Phrase has been replaced with: has passed all applicable federal, state, and local inspection requirements	"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 , any required witness tests are complete, and 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.
Minor Equipment Modification	"Minor equipment modification" means a change to a DER 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; (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 DER of 10 percent or less; (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 .	Edits made to address JU concerns over notification - additional process step added. Additional edit to limit impact on lower-queued projects. Added "minor variations that do not affect safety, performance, or interoperability are acceptable" to address developer concerns about necessary equipment changes from initial application until final project completed.	Minor equipment modification" means a change to a DER 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 DER of 10 percent or less provided that a change made to a DER with a pending completed application must not adversely impact lower queued projects; 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 utility of minor equipment modifications.
Person		Definition spelled out - old references out of date.	(37) "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.
Reference Point of Applicability	"Reference point of applicability" (RPA) means the location where the interconnection and interoperability performance requirements, as specified by IEEE 1547, apply.	Discussion with developer raised concerns of an RPA a mile or more from generator. Staff's definition adds "proximate to the generation" to definition for clarity.	(43) "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

Below are definitions in Division 82 and 39 along with new definitions required to incorporate the new paradigm. Intent is to standardize definitions across the two divisions at this point. Later if the divisions are combined this will eliminate some of the potential issues.

Current-Proposed	Div 82	Div 39
C	(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.	
C	(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.	
Proposed	(3) "Aggregated export capacity" means the total combined export capacity of: (a) A proposed DER; (b) Existing DER, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate capacity greater than 10 megawatts; and (c) DER, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate capacity greater than 10 megawatts that have pending completed applications with higher queue positions than the proposed small generator facility.	
C	(3) "Aggregated nameplate capacity" means the total combined nameplate 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 capacity greater than 10 megawatts; and (c) Small generator facilities, net metering facilities, FERC jurisdictional generators, and state jurisdictional generators with a nameplate capacity greater than 10 megawatts that have pending completed applications with higher queue positions than the proposed small generator facility.	
C		(a) "ANSI C12.1 standards" means the standards prescribed by the 2001 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 July 9, 2001.
C	(4) "Applicant" means a person who has submitted an application to interconnect a small generator facility to a public utility's transmission or distribution system.	(b) "Applicant" means a person who has filed an application to interconnect a net metering facility to an electric distribution system.
C	(5) "Application" means a written request to interconnect a small generator facility with a public utility's transmission or distribution system.	
C	(6) "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. This term has the same meaning as the term "secondary grid network" as defined in IEEE 1547, section 4.1.4.	(c) "Area network" means a type of electric distribution system served by multiple transformers interconnected in an electrical network circuit in order to provide high reliability of service. This term has the same meaning as the term "secondary grid network" as defined in IEEE standard 1547 Section 4.1.4 (published July 2003).
C	"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 , any required witness tests are complete, and 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.	
C		(d) "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.
C		(e) "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.
Proposed	"Distributed energy resource" or "DER" means the equipment used by an interconnection customer to generate and/or store electricity that operates in parallel with the electric distribution system. A DER may include but is not limited to an electric generator and/or energy storage system, a prime mover, or combination of technologies with the capability of injecting power and energy into the electric distribution system, which also includes the interconnection equipment required to safely interconnect the facility with the distribution system.	
C	(8) "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.	(f) "Electric 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.
Proposed	"Energy storage system" or "ESS" 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 Interconnection Procedures, an ESS can be considered part of a DER or a DER in whole that operates in parallel with the distribution system.	
C		(g) "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.
C	(9) "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.	(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.
C	(10) "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 under Tier 4 review and successfully completed a witness test within three years before the date of the submission of the current application.	
C		(i) "Generation capacity" means the nameplate capacity of the power generating device(s). Generation capacity does not include the effects caused by inefficiencies of power conversion or plant parasitic loads.
C		(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 standards" means the standards published in the 2003 edition of the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547, entitled "Interconnecting Distributed Resources with Electric Power Systems," approved by the IEEE SA Standards Board on June 12, 2003, and in the 2005 edition of the IEEE Standard 1547.1, entitled "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems," approved by the IEEE SA Standards Board on June 9, 2005.
C	(11) "IEEE 1547" means the standards published in the 2003 edition of the Institute of Electrical and Electronics Engineers (IEEE) Standard 1547, titled "Interconnecting Distributed Resources with Electric Power Systems" and approved by the IEEE SA Standards Board on June 12, 2003.	
C	(12) "IEEE 1547.1" means the standards published in the 2005 edition of the IEEE Standard 1547.1, titled "Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems" and approved by the IEEE SA Standards Board on June 9, 2005.	
C		(L) "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.
Proposed	"Inadvertent export" means the unscheduled export of active power from a DER, exceeding a specified magnitude and for a limited duration, generally due to fluctuations in load-following behavior.	
C	(13) "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.	(m) "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.
C	(14) "Interconnection customer" means a person with one or more small generator facilities interconnected to a public utility's transmission or distribution system.	
C	(15) "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.	
C	(16) "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.	
C		(n) "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.
C	(17) "Interconnection service" means service provided by an interconnecting public utility to an interconnection customer.	
C	(18) "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.	
Proposed	"Limited export" means the exporting capability of a DER whose export capacity is limited by the use of any configuration or operating mode described in OAR [NEW Export Controls].	
C	(19) "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.	
C	(20) "Minor equipment modification" means a change to a small generator facility or its associated interconnection equipment that: (a) Does not affect the application of the approval requirements in Tiers 1, 2, or 3; (b) Does 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; and (c) Does not affect the nameplate capacity of a small generator facility.	
Proposed	Minor equipment modification" means a change to a DER 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 DER of 10 percent or less provided that a change made to a DER with a pending completed application must not adversely impact lower queued projects; 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 utility of minor equipment modifications.	
C	(21) "Nameplate capacity" means the full-load electrical quantities assigned by a facility's designer to a generator and its prime mover or other piece of electrical equipment, such as transformers and circuit breakers, under standardized conditions, as expressed in amperes, kilovoltamperes, kilowatts, volts, megawatts, or other appropriate units. Nameplate capacity is usually indicated on a nameplate attached to the individual device.	
Proposed	"Nameplate rating" means the sum total of maximum rated power output of all of a DER's constituent generating units and/or ESS as identified on the manufacturer nameplate in Alternating Current (AC), regardless of whether it is limited by any approved means.	
C	(22) "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.	
C	(23) "Net metering facility" has the meaning set forth in ORS 757.300(1)(d).	(o) "Net metering facility" means a net metering facility as defined in ORS 757.300(1)(d).
Proposed	"Non-export or non-exporting" means when the DER is sized and designed, and operated using any of the methods in OAR [NEW Export Controls], such that the output is used for host load only and no electrical energy (except for any Inadvertent Export) is transferred from the DER to the distribution system.	
C		(p) "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 (s) of this rule.
C	(24) "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.	
C	(25) "Person" has the meaning set forth in OAR 860-011-0035(8).	
C	(26) "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, section 3.1.13. This term does not have the same meaning as "point of common coupling" as defined in OAR 860-039-0005(3)(p).	(q) "Point of common coupling" means the point beyond the customer-generator's meter where the customer-generator facility connects with the electric distribution system.
Proposed	"Power control system" or "PCS" means systems or devices which electronically limit or control steady state currents to a programmable limit.	
C	(27) "Primary line" means a distribution line with an operating voltage greater than 600 volts.	
C	(28) "Public utility" has the meaning set forth in ORS 757.005 and is limited to a public utility that provides electric service.	(r) "Public utility" has the meaning set forth in ORS 757.005 and is limited to a public utility that provides electric service.
C	(29) "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.	
Proposed	"Reference point of applicability" (RPA) means the location where the interconnection and interoperability performance requirements, as specified by IEEE 1547, apply.	
Proposed	"Relevant minimum load " means the lowest measured load coincident with the generating facility's production. For solar-only facilities this shall be the daytime minimum load.	
C		(s) "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.

C	(30) "Scoping meeting" means an initial meeting between representatives of an applicant and an interconnecting public utility that is conducted 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.	
C	(31) "Secondary line" means a service line with an operating voltage of 600 volts or less.	
C	(32) "Small generator facility" means a facility for the production of electrical energy that has a nameplate capacity of 10 megawatts or less. A small generator facility does not include interconnection equipment, interconnection facilities, or system upgrades.	
C	(33) "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.	(t) "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.
C	(34) "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.	
C	(35) "Transmission line" means any electric line operating at or above 50,000 volts.	
C	(36) "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.	
C	(37) "Witness test" means the on-site visual verification of the interconnection installation and commissioning as required in IEEE 1547, sections 5.3 and 5.4. 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 system design and production evaluation according to IEEE 1547, sections 5.1 and 5.2, as applicable to the specific interconnection equipment used.	
C	(38) "Written notice" means a notice required by the small generator interconnection rules sent via First Class United States mail. The duty to provide written notice is deemed fulfilled on the day that the notice is deposited in the mail. A public utility and an applicant or interconnection customer may agree in writing to accept written notice via electronic mail. If using electronic mail by agreement, then the duty to provide written notice is deemed fulfilled on the day the notice is sent. A public utility and an applicant or interconnection customer are responsible for informing one another of changes to the physical or electronic address used to receive notifications.	(u) "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 shall be sent via First Class United States mail. The utility shall be 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 shall be responsible for informing the utility of any changes to its notification address.

Applications to Interconnect a Small Generator Facility

	IREC	Joint Utilities	Staff Proposal	Notes
	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 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.		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 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.	
Include interconnection agreement at Tier 1		Outside of scope, but not objectionable		Staff considers this a consensus issue
Siemed IX aoolicant required from Tier 1 aoolicant	Applicants may use the Tier 1 application form only for DER that meet the requirements of OAR 860-082-0045(1). When submittine a Tier 1 aoolication. the aoolicant simultaneouslv submits an executed interconnection aereement.	Obiect - outside of scope. and process not expedited	Aoolicants mav use the Tier 1 aoolication form onlv for DER that meet the requirements of OAR 860-082-0045(1).	This is a change in process - scheduled to be addressed at a later phase, while it does not seem obiectionable. Staff proposes to keep current rule in place at this point.
Screen fail	If an application is denied at one review tier, and the applicant resubmits the application at a higher review tier within 10 ~~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.	Object to process edit	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.	This is a change in process - scheduled to be addressed at a later phase, while it does not seem objectionable, Staff proposes to keep current rule in place at this point.
RPA Review	(e) Reference Point of Applicability Review. (A) For tier 4 applications, the public utility will raise any concerns about the reference point of applicability in the scoping meeting. (B) For tier 1 through tier 3 applications, the following process will occur concurrently with the screening process in OAR 860-082-0045(2)-(3), OAR 860-082-0050(2)-(3), and OAR 860-082-0055(2)-(3). Within five business days after the public utility notifies an applicant that its application is complete, the public utility shall review the reference point of applicability denoted by the applicant and determine if it is appropriate. (i) If it is determined that the RPA is appropriate the public utility will notify the applicant when it provides screen results and proceed according to OAR 860-082-0045(3)-(4), OAR 860-082-0050(3), and OAR 860-082-0055(3). (ii) If the public utility determines the RPA is inappropriate, within five business days after the public utility notifies an applicant that its application is complete, the public utility will notify the applicant in writing, including an explanation as to why it requires correction. The applicant shall resubmit the application with the corrected RPA within five business days. During this time the public utility will proceed with evaluating the application according OAR 860-082-0045(2)-(3), OAR 860-082-0050(2)-(3), and OAR 860-082-0055(2)-(3). The public utility shall review the revised application within five business days to determine if the revised RPA has been appropriately denoted. If correct, the public utility will proceed according to subsections OAR 860-082-0045(3)-(8), OAR 860-082-0050(3)-(7), and OAR 860-082-0055(3)-(7). If the applicant does not provide the appropriate RPA or a request for an extension of time within the deadline. the aoolication will be deemed withdrawn.	Obiect to parallel process for RPA review. as related to process edits	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 shall 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.	While this is a process change, there is need for some process to incorporate use of RPA - with JU do not object too. Staff's proposal allows RPA evaluation along with fast track screens, as opposed to a parallel process. Staff's proposal allows for 10 days (same time for rectifying an incomplete application) to correct RPA. Additionallv - aoolicant can chanee this at an Aoolicant's ootions meetine.
Interconnection Aereement	Interconnection Agreement. If the proposed interconnection 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 the applicant options meeting, providing supplemental review screen results, or completing the last tier 4 study . If the public utility approves the proposed interconnection despite screen failure or at the applicant options meeting, 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, within fifteen 15 business days of approval despite screen failure or the applicant options meeting. The interconnection agreement must follow the standard form agreement developed by the public utility and approved by the Commission. If the applicant does not return a countersigned interconnection agreement 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.	(e) A public utility must provide an executable interconnection agreement no later than five business days after the date of approval of an interconnection application . The interconnection agreement must follow the standard form agreement developed by the public utility and approved by the Commission. The applicant must return an executed interconnection agreement to the public utility or request negotiation of a non-standard interconnection agreement within 15 business days of receipt or the application is deemed withdrawn.	Interconnection Agreement. If the proposed interconnection requires no construction of facilities by the public utility, or the public utility approves the proposed interconnection despite screen failure or at the applicant options meeting the public utility must provide the applicant an executed interconnection agreement no later than five business days after the applicant options meeting, providing supplemental review screen results, or completing the last tier 4 study . If the applicant does not return a countersigned interconnection agreement to the public utility or request negotiation of a non-standard interconnection agreement within 15 business days of receipt of an executed interconnection aereement. the aoolication is deemed withdrawn.	Staff's proposal adheres to requirements of providing interconnection agreement five days after aooroval. Small process chanee here to make it an executed aereement.
Interconnection Agreement (A)-(D)		(A) The public utility has the option of conducting a witness test at a mutually agreeable time within 10 business days of the scheduled commissioning.	(A) The public utility has the option of conducting a witness test at a mutually agreeable time within 10 business days of the scheduled commissioning.	
IREC proposes to replace "schedule commissioning" with "Certificate of completion	(A) The public utility has the option of conducting a witness test at a mutually agreeable time within 10 business days of the receipt of the certificate of completion.		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.	"Certificate of completion" is a defined term in Division 82 - this change will help clarify the requirements, even if it is a process change - also aligns with FERC SGIP.
	(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.	(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.	(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.	Timeline adds clarity
	(D) If the witness test is conducted and is successful, then the public utility must provide the countersigned certificate of completion within three business days.		(D) If the witness test is conducted and is successful, or if the public utility waives 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.	replaces scheduled commissioning date with 'certificate of completion' Staff proposal uses five days - standard time used elsewhere.

	IREC	Joint Utilities	Interconnection Trade Association	Staff proposal	Notes
Construction, Operation, Maintenance, and Testing of Small Generator Facilities 860-082-0035					
Date for new applications to comply with new rules	January 1, 2024	July 1, 2023 or 30-60 days after the adoption of rules		Later of January 1, 2024 or 30-60 days after rules are adopted.	Need to give applicants time to meet new requirements, and need to have equipment available. Staff believes review of requirements included in utility handbooks is a good step to bring transparency to the process. Submission for approval by the beginning of September should allow for use of standards by Jan 1 2024.
			Utilities cannot "require any interconnection upgrade to bring the distribution system to an operational standard that is not in their respective interconnection handbooks."		
Interconnection Handbooks	Interconnection requirements handbook . Each public utility shall post an interconnection requirements handbook on its public website. Interconnection requirements handbooks shall be filed with the commission for public notice and comment, Energy Trust of Oregon comment, and commission approval by September 1, 2023. Subsequent changes to interconnection requirements handbooks shall also be filed with the commission for public notice and comment, Energy Trust of Oregon comment, and commission approval	Interconnection requirements handbook . Each public utility shall post an interconnection requirements handbook on its public website	Recommend a "conduct a notice and comment process" for handbooks File handbooks with OPUC w 60 days for comments, no objections and changes in handbooks go into effect. If there are challenges the Commission would need to make a formal determination.	Interconnection requirements handbook . Each public utility shall post an interconnection requirements handbook on its public website. Interconnection requirements handbooks shall be filed with the commission for public notice and comment, and commission approval by September 1, 2023. Subsequent changes to interconnection requirements handbooks shall also be filed with the commission for public notice and comment and commission approval	Staff did not call out any specific intervenors at this time, but believes increased cooperation between Energy Trust and Joint Utilities will be beneficial in the long-term. Process suggested by ITA is intriguing - may require additional conversation.
Operating requirements	Within 24 months from an applicant's execution of an interconnection agreement or six months of completion of any upgrades, whichever is later, the applicant shall commence operation of an approved small generating facility. However, the applicant and public utility may mutually agree to an extension of this time if warranted, which shall not be unreasonably withheld. The applicant must provide written notice to the interconnecting public utility 10 business days before beginning operation of an approved small generator facility.			The applicant must provide written notice to the interconnecting public utility 10 business days before beginning operation of an approved small generator facility.	IREC's additional language is a process change, which seems reasonable. However, Staff will not propose to change this process at this time.
Contract length	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 maximum 30-year term for an interconnection agreement.~~	Oppose striking final sentence as outside scope, and raising potential issues when combining Div 82 and Div 39		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, but can be a term mutually agreed upon between the interconnecting utility and customer.	Staff proposal offers flexibility with mutual agreement
Minimum operating requirements	Incorporates IEEE requirements includes categories: abnormal performance requirements, normal performance requirements, compliant with UL 1741 standards, . Preferred default settings required from Utilities for: voltage and trip , frequency droop, activated reactive power, voltage active power (volt-watt) mode, communications protocols and ports.	Added "inverter-based" to the UL 1741 certification.		Incorporate IREC proposal. with JU suggested edits	Staff considers these consensus issues
Cost Responsibility 860-082-0040					
Study Costs	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 $1000, whichever is less. The applicant must pay any study costs that exceed the deposit without interest within 30 calendar days on receipt of the invoice or resolution of any dispute. If the deposit exceeds the invoiced fees, the public utility shall refund such excess within 30 calendar days of the invoice without interest			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 $1000, whichever is less.	IREC's additional language is a process change, based on FERC SGIP requirements, which seems reasonable. However, Staff will not propose to change this process at this time.
	(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. Within 60 calendar days of completing the construction and installation of the interconnection facilities or system upgrades, the public utility shall provide the applicant with a final accounting report of any difference between (1) the actual cost incurred to complete the construction and installation and the budget estimate provided to the applicant and (2) the applicant's previous deposit and aggregate payments to the public utility for such interconnection facilities or system upgrades. The public utility shall provide a written explanation for any actual cost exceeding a budget estimate by 25 percent or more. If the applicant's cost responsibility exceeds its previous deposit and aggregate payments, the public utility shall invoice the applicant for the amount due and the applicant shall make payment to the public utility within 30 calendar days. 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.			(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 applicant's cost responsibility exceeds its previous deposit and aggregate payments, the public utility shall invoice the applicant for the amount due and the applicant shall make payment to the public utility within 30 calendar days. 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.	IREC's additional language is a process change, Staff will not propose to change this process at this time.

Issue	IREC	Joint Utilities	Staff proposal	Notes
Reverse Power Protection (Device 32R)	See Export Controls	Added requirement that reclosures be faster than 2.0 seconds on circuits using high-speed reclosing.	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 shall be 0.1% (export) of the service transformer's nominal base 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 utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing.	included JU edit
Minimum Power Protection (Device 32F)	See Export Controls	Added requirement that reclosures be faster than 2.0 seconds on circuits using high-speed reclosing.	**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 shall be 5% (import) of the DER'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 utility may require a maximum delay of less than 2.0 seconds to safely facilitate the reclosing.	included JU edit
Relative Distributed Energy Resource Rating	See Export Controls	Object to the use of this metric at the sole discretion of the interconnection customer - would like it removed.	Relative Distributed Energy Resource Rating: Upon utility agreement, this option requires the DER'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 DER's Nameplate Rating to be no greater than 50% 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.	Added "Upon utility agreement" to address concerns raised.
Certified Power Control Systems	DER may use certified power control systems to limit export. DER utilizing this option must use a power control system and inverter certified per UL 1741 by a nationally recognized testing laboratory (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 shall 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.	Certified Power Control Systems: DER may use certified power control systems to limit export. DER utilizing this option must use a power control system and inverter certified per UL 1741 by a nationally recognized testing laboratory (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 shall 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.	(A)Certified Power Control Systems: DER may use certified power control systems to limit export. DER utilizing this option must use a power control system and inverter certified per UL 1741 by a nationally recognized testing laboratory (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 shall 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.	Staff's understanding is the requirements decision should be sufficient until such time as the standard is officially updated.

Tier 1 Interconnection Review	IREC	Joint Utilities	Staff proposal	Notes
Connection allowed	The DER must not be interconnected to a transmission line	The DER must not be interconnected to a transmission line, or a area network	The DER must not be interconnected to a transmission line, or a area network	Consistent with current requirements.
Substation backfeed screen	Substation backfeed screen. Where existing protective devices and equipment cannot adequately support backfeed, the aggregated export capacity on the substation must be less than 90 percent of the relevant minimum load for the substation transformer.	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.	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.	Staff is comfortable with the 80% threshold here - same screen for Tier 2. Also accepting change to substation 'transformer'.
Penetration Screen	(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 DER) 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 DER; (B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed DER) 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.	Supports IREC proposal	(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 DER) 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 DER; (B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed DER) 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.	IREC would prefer 100% of minimum load, but is willing to compromise at 90%. As such, Staff considers this a consensus issue.
Network Screen	Network Screen. For interconnection of a DER within a spot network or area network, the aggregate nameplate rating including the DER's nameplate rating may not exceed 50 percent of the spot network or area network's anticipated minimum load. If solar energy generating facilities are used exclusively, only the anticipated daytime minimum load shall be considered. The public utility may select any of the following methods to determine anticipated minimum load: (A) the spot network or area network's measured minimum load in the previous year, if available; (B) five percent of the spot network or area 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	•Tier 1 is Inverter-Based . •Spot Networks: aggregate gen must not exceed the lesser of 5% Spot Network max load or 50kW . •Area Networks: prohibited by omission	Network Screen. For interconnection of a DER within a spot network or area network, the aggregate nameplate rating including the DER's nameplate rating may not exceed 50 percent of the spot network ~~or area network~~'s anticipated minimum load. If solar energy generating facilities are used exclusively, only the anticipated daytime minimum load shall be considered. The public utility may select any of the following methods to determine anticipated minimum load: (A) the spot network or area network's measured minimum load in the previous year, if available; (B) five percent of the spot network or area 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	Staff's proposal here uses the IREC proposal, but restricts this to spot networks, not area networks. Staff is interested in impacts of keeping the current rules, as proposed by the Joint Utilities, versus IREC's proposal. Information that would be helpful from the utilities includes the range of spot networks the utility has and the maximum load for each of them, as well as the minimum (or estimates of the minimum). Also, please identify how many of these networks have existing generation resources and their percentages.
Single-phase Shared Secondary Screen	Single -Phase Shared Secondary Screen. For interconnection of a DER to a single-phase shared secondary line, the aggregated export capacity on the shared secondary must not exceed the higher of 20 kilowatts or 65 percent of the transformer nameplate power rating.	Single -Phase Shared Secondary Screen. For interconnection of a DER to a single-phase shared secondary line, the aggregated export capacity on the shared secondary must not exceed ~~the higher of 20 kilowatts or~~ 65 percent of the transformer nameplate power rating.	Single-Phase Shared Secondary Screen. For interconnection of a DER 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.	Removed the 20 kw as some transformers are smaller. Staff believes this is a consensus issue.
Service Imbalance Screen	Service Imbalance Screen. For interconnection of a single-phase DER to the center tap neutral of a 240-volt service line, the addition of the DER must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate rating of the service transformer.		Service Imbalance Screen. For interconnection of a single-phase DER to the center tap neutral of a 240-volt service line, the addition of the DER must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate rating of the service transformer.	Consensus issue
Written notice	Written notice. In addition to the timelines and requirements in OAR 860-082-0025, and if a net metering facility OAR 860-039, the public utility must provide written notice to the applicant stating whether the DER meets the Tier 1 approval criteria no later than 7 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 receipt of an application, the interconnection will be deemed approved.	Object to process changes, including expedited timelines	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 receipt of an application, the interconnection will be deemed approved.	Staff kept current timelines, but kept IREC's proposed 'deemed approval' for Tier 1 applicants that are not approved or denied in a timely fashion. This is inline with requirements for Division 39.
Interconnection after passing screens	Interconnection after passing screens. If the proposed interconnection passes the screens, the public utility shall provide the applicant with a copy of the Tier 1 application form, signed by the public utility, forming the Tier 1 interconnection agreement, at the time the screen results are provided. If the public utility does not notify an applicant whether an application is approved or denied in writing within twenty business days after notification of the Tier 1 review results, the interconnection agreement signed by the applicant as part of the Tier 1 application shall be deemed effective	Oppose process change, also "substantively oppose at least some of the changes in this section."	Interconnection after passing screens. If the proposed interconnection passes the screens, the public utility shall provide the applicant with a copy of the Tier 1 application form, no later than five business days after approval, signed by the public utility, forming the Tier 1 interconnection agreement, ~~at the time the screen results are provided.~~ If the public utility does not notify an applicant whether an application is approved or denied in writing within twenty business days after notification of the Tier 1 review results, the interconnection agreement signed by the applicant as part of the Tier 1 application shall be deemed effective.	Staff believes a process after passing fast-track screens is appropriate here. Staff's proposal is consistent with current requirements that utilities respond within five days of approval.
Approval despite screen failure	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 DER 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.		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 DER 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.	Staff believes this is a consensus issue
Process after screen failure			Process after screen failure. If the public utility cannot determine that the DER 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)Specific information on the reason(s) for failure in writing using a standard format approved by the Commission, (b) An executable Supplementary 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 860-082-006X; (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	Staff believes this is a consensus issue
Applicant options meeting.			Applicant options meeting. At the time the public utility notifies the applicant of the Tier 1 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications, opportunity to designate a different RPA , or the screen analysis and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.	Staff added opportunity to redesignate an RPA at the applicant options meeting. Unless that is a concern, Staff believes this is a consensus issue
Public Utility Approval	~~The public utility approves the application;~~	Oppose process change.	~~The public utility approves the application;~~	Staff believes this is unnecessary given the potential for 'deemed approval' of Tier 1 interconnections

Tier 2 Interconnection Review	IREC	Joint Utilities	Staff proposal	Notes
			If the DER is inverter-based, the DER's export capacity does not exceed the limits identified in the table below, which vary according to the voltage of the line at the proposed point of interconnection. Line Voltage Export Capacity for Fast Track Tier 2 Eligibility Regardless of location On > 600 amp line and < 2.5 miles from substation < 5 kV < 1 MW < 2 MW 5 kV – 14 kV 2 MW < 3 MW 15 kV – 30 kV 3 MW < 4 MW 31 kV – 69 kV 4 MW < 5 MW	
	The DER's export capacity does not exceed the limits identified in the table below, which vary according to the voltage of the line at the proposed point of interconnection. Line Voltage Export Capacity for Fast Track Tier 2 Eligibility Regardless of location On > 600 amp line and < 2.5 miles from substation < 5 kV < 1 MW < 2 MW 5 kV – 14 kV 2 MW < 3 MW 15 kV – 30 kV 3 MW < 4 MW 31 kV – 69 kV 4 MW < 5 MW	If the DER is inverter-based , the DER's export capacity does not exceed the limits identified in the table below, which vary according to the voltage of the line at the proposed point of interconnection.		
Eligibility	DER located within 2.5 miles of a substation and on a main distribution line with minimum 600-amp capacity are eligible for Tier 2 interconnection under higher thresholds;	If the DER is not inverter-based, the DER's export capacity is two megawatts or less;	(c) If the DER is not inverter-based, the DER's export capacity is two megawatts or less;	With the JU edits incorporated, Staff believes this is a consensus issue
Connection allowed	The DER must not be interconnected to a transmission line	The DER must not be interconnected to a transmission line, or an area network	The DER must not be interconnected to a transmission line, or a area network	Consistent with current requirements.
Substation backfeed screen See Tier 1 - same approach.	Substation backfeed screen. Where existing protective devices and equipment cannot adequately support backfeed, the aggregated export capacity on the substation must be less than 90 percent of the relevant minimum load for the substation transformer.	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.	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.	Staff is comfortable with the 80% threshold here - same screen for Tier 2. Also accepting change to substation 'transformer'.
Penetration Screen See also Tier 1	(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 DER) 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 DER; (B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed DER) 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.	Supports IREC proposal in Tier 1 - assume same for Tier 2	(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 DER) 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 DER; (B) If 12 months of minimum load data (including onsite load but not station service load served by the proposed DER) 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.	IREC would prefer 100% of minimum load, but is willing to compromise at 90%. As such, Staff considers this a consensus issue.
Network Screen	Network Screen. For interconnection of a DER within a spot network or area network, the DER must be inverter-based and use a minimum import relay or other protective scheme that will ensure that power imported from the public utility to the network will, during normal public utility operations remain above one percent of the network's maximum load over the past year or will remain above a point reasonably set by the public utility in good faith. At the public utility's discretion, the requirement for minimum import relays or other protective schemes may be waived	Support keeping existing requirements in place: •Spot Networks: Limited to serving 1 customer ; aggregate gen must not exceed the lesser of 5% Spot Network max load or 50kW. •Area Networks: prohibited .	Network Screen. For interconnection of a DER within a spot network ~~or area network~~, the DER must be inverter-based and use a minimum import relay or other protective scheme that will ensure that power imported from the public utility to the network will, during normal public utility operations remain above one percent of the network's maximum load over the past year or will remain above a point reasonably set by the public utility in good faith. At the public utility's discretion, the requirement for minimum import relays or other protective schemes may be waived	Staff's draft makes use of IREC's proposal, but only for spot-networks. See also Tier 1 for related questions.
Fault Current Screen.	The DER, 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.		The DER, 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.	Staff believes this is a consensus issue
Short-Circuit Interrupting Capability Screen.	The DER, aggregated with other generation 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 DER's point of interconnection must not be located on a circuit that already exceeds 90 percent of the short circuit interrupting capability.		The DER, aggregated with other generation 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 DER's point of interconnection must not be located on a circuit that already exceeds 90 percent of the short circuit interrupting capability.	Staff believes this is a consensus issue
Transient Stability Screen	The DER's nameplate rating, in aggregate with other DERs interconnected to the distribution side of a substation transformer feeding the circuit where the DER 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).		The DER's nameplate rating, in aggregate with other DERs interconnected to the distribution side of a substation transformer feeding the circuit where the DER 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).	Staff believes this is a consensus issue
Line configuration screen IREC's proposed table is duplicated below	Using the table below, 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. Primary Distribution Line Type Type of Interconnection to Primary Distribution Line Result/Criteria Three-phase, three-wire If ungrounded on primary or any type on secondary Pass screen Three-phase, four-wire Single-phase line-to-neutral Pass screen Three-phase, four-wire or mixed three-wire and four-wire All others Pass screen for inverter-based generation if the aggregate nameplate rating, including the nameplate rating of the proposed project, is •≤ 100 percent feeder or line section minimum load, or •If minimum load data is not available: ≤ 30 percent feeder or line section peak load. Pass screen for rotating generation if the aggregate nameplate rating, including the nameplate rating of the proposed project, is: •≤ 33 percent of feeder or line section minimum load, or •If minimum load data isn't available: ≤ 10 percent of feeder or line section peak load.	If the small generator facility interconnection is to a primary line on the distribution system, then the interconnection must meet the following criteria: (A) If the small generator facility is three-phase or single-phase and will be connected to a three-phase, three-wire primary line, then the small generator facility must be connected phase-to-phase. (B) If the small generator facility is three-phase or single-phase and will be connected to a three-phase, four-wire primary line, then the small generator facility must be connected line-to-neutral and effectively grounded.	If the small generator facility interconnection is to a primary line on the distribution system, then the interconnection must meet the following criteria: (A) If the small generator facility is three-phase or single-phase and will be connected to a three-phase, three-wire primary line, then the small generator facility must be connected phase-to-phase. (B) If the small generator facility is three-phase or single-phase and will be connected to a three-phase, four-wire primary line, then the small generator facility must be connected line-to-neutral and effectively grounded.	Staff's draft proposal keeps the current language intact. It is our understanding that generator side events should occur without consequences upstream, which is accommodated by effectively grounding the customer side. Staff's understanding is IRECs proposal does not require effective grounding, as such there could be negative impacts for other customers.
Single-phase Shared Secondary Screen See Tier 1	Single -Phase Shared Secondary Screen. For interconnection of a DER to a single-phase shared secondary line, the aggregated export capacity on the shared secondary must not exceed the higher of 20 kilowatts or 65 percent of the transformer nameplate power rating.	Single -Phase Shared Secondary Screen. For interconnection of a DER to a single-phase shared secondary line, the aggregated export capacity on the shared secondary must not exceed ~~the~~ higher of 20 kilowatts or 65 percent of the transformer nameplate power rating.	Single-Phase Shared Secondary Screen. For interconnection of a DER 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.	Removed the 20 kw as some transformers are smaller. Staff believes this is a consensus issue.
Service imbalance screen	For interconnection of a single-phase DER to the center tap neutral of a 240-volt service line, the addition of the DER must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate rating of the service transformer.		For interconnection of a single-phase DER to the center tap neutral of a 240-volt service line, the addition of the DER must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate rating of the service transformer.	Staff believes this is a consensus issue
Tie to Inadvertent export screen	Except as provided in subsection (2)(l), the interconnection of the DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment		Except as provided in subsection (2)(l), the interconnection of the DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment	Staff believes this is a consensus issue
Synchronous machines require Tier 4 application	If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the DER must not be a synchronous machine. If the DER is a synchronous machine, then the applicant must submit a Tier 4 application.		If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the DER must not be a synchronous machine. If the DER is a synchronous machine, then the applicant must submit a Tier 4 application.	Staff believes this is a consensus issue
Inadvertent Export Screen. Formula below	For interconnection of a proposed DER 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 following formula:		For interconnection of a proposed DER 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 following formula:	Staff believes this is a consensus issue
Timelines	In addition to the timelines and requirements in OAR 860-082-0025, and if a net metering facility OAR 860-039, the following timelines and requirements apply to Tier 2 interconnection reviews: (a) 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 shall provide the applicant an executed interconnection agreement at the same time as the screen results. If applicable, the public utility must include a comparison of its evaluation to the applicant's independent analysis	The Joint Utilities oppose the process changes in this subsection as outside of scope, although the Joint Utilities do not have a substantive objection to the proposal to remove the scoping meeting requirement.	(3) Timelines . In addition to the timelines and requirements in OAR 860-082-0025, and if a net metering facility OAR 860-039, the following timelines and requirements apply to Tier 2 interconnection reviews: (a) 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 shall provide the applicant an executed interconnection agreement within five days of the screen results. If applicable, the public utility must include a comparison of its evaluation to the applicant's independent analysis.	Staff believes a process after passing fast-track screens is appropriate here. Staff's proposal is consistent with current requirements that utilities respond within five days of approval.
Approval despite screen failure	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 DER 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.		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 DER 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.	Staff believes this is a consensus issue
Process after screen failure.	If the public utility cannot determine that the DER 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 specific information on the reason(s) for failure in writing using a standard format approved by the Commission. 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; or (b) Undergo supplemental review in accordance with OAR [NEW SUPPLEMENTAL REVIEW]; (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.		If the public utility cannot determine that the DER 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)Specific information on the reason(s) for failure in writing using a standard format approved by the Commission, (b) An executable Supplementary 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 860-082-006X; (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.	Staff believes this is a consensus issue

Applicant options meeting.	Applicant options meeting. At the time the public utility notifies the applicant of the Tier 2 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications or the screen analysis, and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.	Applicant options meeting. At the time the public utility notifies the applicant of the Tier 1 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications, opportunity to designate a different RPA , or the screen analysis and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.	Staff added opportunity to redesignate an RPA at the applicant options meeting. Unless that is a concern, Staff believes this is a consensus issue

Line Configuration Screen

Using the table below, 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.

Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line	Result/Criteria
Three-phase, three-wire	If ungrounded on primary or any type on secondary	Pass screen
Three-phase, four-wire	Single-phase line-to-neutral	Pass screen
Three-phase, four-wire or mixed three-wire and four-wire	All others	Pass screen for inverter-based generation if the aggregate nameplate rating, including the nameplate rating of the proposed project, is: • ≤ 100 percent feeder or line section minimum load, or • if minimum load data is not available: ≤ 30 percent feeder or line section peak load. Pass screen for rotating generation if the aggregate nameplate rating, including the nameplate rating of the proposed project, is: • ≤ 33 percent of feeder or line section minimum load, or • if minimum load data isn't available: ≤ 10 percent of feeder or line section peak load.

Inadvertent export screen - formula

$$\frac{(\mathbf{R_{SOURCE}} \times \Delta\mathbf{P}) - (\mathbf{X_{SOURCE}} \times \Delta\mathbf{Q})}{\mathbf{V^2}}$$

Where:

$\Delta\mathbf{P} = (\mathbf{DER\ apparent\ power\ Nameplate\ Rating - Export\ Capacity}) \times \mathbf{PF}$,

$\Delta\mathbf{Q} = (\mathbf{DER\ apparent\ power\ Nameplate\ Rating - Export\ Capacity}) \times \sqrt{(\mathbf{1 - PF^2})}$,

$\mathbf{R_{SOURCE}}$ **is the grid resistance,** $\mathbf{X_{SOURCE}}$ **is the grid reactance,**
$\mathbf{V}$ **is the grid voltage,** $\mathbf{PF}$ **is the power factor**

Tier 3 Interconnection Review	IREC	Joint Utilities	Staff proposal	Notes
Eligibility	A public utility must use the Tier 3 interconnection review procedures when an applicant submits an application requesting Tier 3 review to interconnect a DER that meets the following requirements: (a) The DER must have a nameplate capacity of 10 megawatts or less; (b) The DER must not be connected to a transmission line; (c) The DER must not export power beyond the point of interconnection; and (d) The DER must use low forward power relays or other protection functions that prevent power flow onto the area network.		A public utility must use the Tier 3 interconnection review procedures when an applicant submits an application requesting Tier 3 review to interconnect a DER that meets the following requirements: (a) The DER must have a nameplate capacity of 10 megawatts or less; (b) The DER must not be connected to a transmission line; (c) The DER must not export power beyond the point of interconnection; and (d) The DER must use low forward power relays or other protection functions that prevent power flow onto the area network.	Minor edits - Staff believes this is a consensus issue
Tier 3 Approval Criteria	Tier 3 Approval Criteria. A public utility must approve an application to interconnect a DER under the Tier 3 interconnection review procedures if the DER 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 DER 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 DER must be 50 kilowatts or less; (B) The DER 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 DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment. (b) For a DER to interconnect to a distribution circuit that is not networked, the small generator facility must meet the following criteria: (A) The DER must have a nameplate rating of 10 megawatts or less; (B) The aggregated nameplate rating on the circuit must be 10 megawatts or less; (C) The DER must not export power beyond the point of interconnection; (D) The DER's point of interconnection must be to a radial distribution circuit; (E) The DER must not be served by a shared transformer; (F) Except as allowed in subsection (2)(c), the interconnection of the DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment; and (G) If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the DER must not be a synchronous machine. If the DER is a synchronous machine, then the applicant must submit a Tier 4 application. (c) If the DER fails to meet one or more of the Tier 3 approval requirements, but the public utility determines that the DER 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.		Tier 3 Approval Criteria. A public utility must approve an application to interconnect a DER under the Tier 3 interconnection review procedures if the DER 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 DER 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 DER must be 50 kilowatts or less; (B) The DER 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 DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment. (b) For a DER to interconnect to a distribution circuit that is not networked, the small generator facility must meet the following criteria: ~~(A) The DER must have a nameplate rating of 10 megawatts or less;~~ (B) The aggregated nameplate rating on the circuit must be 10 megawatts or less; ~~(C) The DER must not export power beyond the point of interconnection;~~ (D) The DER's point of interconnection must be to a radial distribution circuit; (E) The DER must not be served by a shared transformer; (F) Except as allowed in subsection (2)(c), the interconnection of the DER must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment; and (G) If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the DER must not be a synchronous machine. If the DER is a synchronous machine, then the applicant must submit a Tier 4 application. (c) If the DER fails to meet one or more of the Tier 3 approval requirements, but the public utility determines that the DER 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.	Staff has removed two requirements in this section as being redundant. Staff believes this section of Tier 3 is a consensus issue - but would like to verify.
Timelines	In addition to the timelines and requirements in OAR 860-082-0025, the following timeline and requirements apply to Tier 3 interconnection reviews. Within 20 business days after a public utility notifies an applicant its application is complete, 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 shall provide the applicant an executed interconnection agreement at the time as the screen results. If applicable, the public utility must include a comparison of its evaluation to the applicant's independent evaluation. 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.	JU objected to Tier 2 process changes, assume those are the same here	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 ~~public utility and 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 shall provide the applicant an executed interconnection agreement within five days of the screen results. If applicable, the public utility must include a comparison of its evaluation to the applicant's independent evaluation. 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.	Staff is keeping the scoping meeting requirement here, but giving the applicant the ability to waive the meeting. Staff has added five days here, consistent with the process after approval.
ISI Process after screen failure	If the public utility cannot determine that the DER 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 shall provide the applicant with specific information on the reason(s) for failure in writing using a standard format approved by the Commission. 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; or (b) Undergo supplemental review in accordance with OAR [NEW SUPPLEMENTAL REVIEW]; (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.		Process after screen failure. If the public utility cannot determine that the DER 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 shall provide the applicant with: (a)Specific information on the reason(s) for failure in writing using a standard format approved by the Commission, (b) An executable Supplementary 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 860-082-0068; (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	Staff believes this is a consensus issue
Applicant options meeting.	Applicant options meeting. At the time the public utility notifies the applicant of the Tier 2 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications or the screen analysis, and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.		Applicant options meeting. At the time the public utility notifies the applicant of the Tier 1 review results, the public utility shall provide the applicant the option of participating in an applicant options meeting with the public utility to review possible DER modifications, opportunity to designate a different RPA , or the screen analysis and related results, to determine what further steps are needed to permit the DER to be connected safely and reliably. 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.	Staff added opportunity to redesignate an RPA at the applicant options meeting. Unless that is a concern, Staff believes this is a consensus issue

$$\frac{(\mathbf{R_{SOURCE}} \times \Delta \mathbf{P}) - (\mathbf{X_{SOURCE}} \times \Delta \mathbf{Q})}{\mathbf{V}^2}$$

Where:

$\Delta \mathbf{P} = (\mathbf{DER\ apparent\ power\ Nameplate\ Rating} - \mathbf{Export\ Capacity}) \times \mathbf{PF}$,

$\Delta \mathbf{Q} = (\mathbf{DER\ apparent\ power\ Nameplate\ Rating} - \mathbf{Export\ Capacity}) \times \sqrt{(1 - \mathbf{PF}^2)}$,

$\mathbf{R_{SOURCE}}$ **is the grid resistance,** $\mathbf{X_{SOURCE}}$ **is the grid reactance,**
$\mathbf{V}$ **is the grid voltage,** $\mathbf{PF}$ **is the power factor**

Tier 4 Interconnection Review	IREC	Joint Utilities	Staff proposal	Notes
Eligibility	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 three business days of receipt of the applicant's request to use the existing application, the public utility shall transfer of 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 shall provide a written list detailing all information that the applicant must provide to complete the application. The applicant will have 20 business days after receipt of the list to submit the listed information. Otherwise, the application will be deemed withdrawn. The public utility shall notify the applicant within three 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.	Object to process changes in general	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 shall transfer of 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 shall 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 shall 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.	Staff's edits were designed to match current timeline requirements here and not expedite the process. Staff heard from developers that a feasibility study is not necessary in many cases, therefore Staff would like to give the applicants the opportunity to decline the study.
Studies and Meetings	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	Object to process changes in general	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.	
Timeline when studies not needed	If the public utility determines that no studies are necessary, then the public utility must send the applicant an executed interconnection agreement within 5 business days of the scoping meeting if: (A) The application meets the criteria in section (2); and (B) The interconnection of the DER does not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.	Object to process changes in general	If the public utility determines that no studies are necessary, then the public utility must send the applicant an executed interconnection agreement ~~approve the application~~ within 15 business days of the scoping meeting if: (A) The application meets the criteria in section (2); and (B) The interconnection of the DER does not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.	Staff believes replacing "approve the application" with an obligation to send an executed agreement is a clarifying change. Staff has declined to expedite the process at this point, leaving 15 days instead of the 5 proposed by IREC.
minor edits - remove timeline requirements as they are redundant here	(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 DER does not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.		(A) If the public utility concludes that a facilities study is not required, then the public utility must approve the application ~~with 15 business days of completion of the feasibility study~~ if the application meets the criteria in section (2) and the interconnection of the DER does not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.	Timeline is included in 860-082-0025(6)(i)(A)
minor edits - remove timeline requirements as they are redundant here	(B) If the public utility concludes that a facilities study is not required and that the DER 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 .		(B) If the public utility concludes that a facilities study is not required and that the DER 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 receipt of the applicant's agreement to pay for the minor modifications.~~	Timeline is included in 860-082-0025(6)(i)(A)
System Impact Study	The system impact study shall be completed within 30 business days of the applicant's delivery of the executed system impact study agreement. ~~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.~~	Object to process changes in general	The system impact study shall be completed within 30 business days of the applicant's delivery of the executed system impact study agreement	Staff believes this as this change aligns with Division 29, and FERC SGIP requirements it is a valid clarifications.
Adverse system impacts	(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. The system impact study must take into account the proposed DER's design and operating characteristics, including but not limited to the proposed operating profile, and study the DER according to how it is proposed to be operated. If the DER limits export pursuant to OAR {NEW EXPORT CONTROLS}, 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; for example, the customer may provide 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.		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. The system impact study must take into account the proposed DER's design and operating characteristics, including but not limited to the proposed operating profile, and study the DER according to how it is proposed to be operated. If the DER limits export pursuant to OAR 860-082-003X, 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; for example, the customer may provide 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	Staff believes proposed changes help incorporate new requirements
Facility Study timeline	The facilities study shall be completed within 45 business days of the applicant's delivery of the executed facilities study agreement. ~~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.~~		The facilities study shall be completed within 45 business days of the applicant's delivery of the executed facilities study agreement	Staff believes this is a clarifying change. IREC's proposal aligns with FERC SGIP Att. 8 Sec. 7.0 (45 days from signed agreement if upgrades required; 30 days if no upgrades required and required facilities limited to interconnection facilities.)

Issue	IREC	Joint Utilities	REC	Staff proposal	
Accept Supplemental Review offer	Provides applicant 20 business days to accept offer of Supplemental Review, otherwise Utility to continue to evaluate under Tier 4.	Shortens timeframe for acceptance to ten business days. Tier 4 review occurs upon applicant request, otherwise application deemed withdrawn.		(1)To accept the offer of a Supplemental Review, the Applicant shall submit a signed copy of the Supplementary Review Agreement and pay a Supplemental Review fee of $1,000, both within ten (10) Business days of the offer. If the written agreement and fee have not been received within that timeframe, the Application shall be deemed withdrawn unless the Applicant has notified the Utility that they wish to continue being evaluated under the Tier 4 review procedures.	Accept shortened timeframe as it aligns with procedures related to an incomplete application, See OAR 860-082-0025(7)(a). Require applicant to affirmatively request Tier 4 review; applicant may not want to proceed, additional costs at Tier 4 app fee $100 at Tier 1, $1,000 at Tier 4.
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 DER) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Export Capacity on the Line Section is less than 100% of the gross minimum load for all Line Sections bounded by automatic sectionalizing devices upstream of the proposed Project. If minimum load data is not available, or cannot be calculated, estimated, or determined, the Export Capacity of the Project, aggregated with the Export Capacity of other Projects on the Line Section, is less than 30% of the peak load for all Line Sections bounded by automatic sectionalizing devices upstream of the proposed Project.	Where 12 months of Line Section minimum load data (including onsite load but not station service load served by the proposed DER) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Export Capacity on the feeder or line section is less than 90% of the gross minimum load on the feeder. Should the feeder be served by a dedicated substation transformer the screen shall be based on 80% of gross minimum load. If minimum load data is not available, or cannot be calculated, estimated, or determined, the Export Capacity of the Project, aggregated with the Export Capacity of other Projects on the Line Section, is less than 30% of the peak load for all Line Sections bounded by automatic sectionalizing devices upstream of the proposed Project.		Where 12 months of Line Section minimum load data (including onsite load but not station service load served by the proposed DER) are available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Export Capacity on the Line Section is less than 100% of the gross minimum load for all Line Sections bounded by automatic sectionalizing devices upstream of the proposed Project. If minimum load data is not available, or cannot be calculated, estimated, or determined, the Export Capacity of the Project, aggregated with the Export Capacity of other Projects on the Line Section, is less than 30% of the peak load for all Line Sections bounded by automatic sectionalizing devices upstream of the proposed Project.	
Supplemental Review Penetration Screen(B)	Load that is co-located with load-following, non-exporting or export-limited Projects should be appropriately accounted for.	Load that is co-located with load-following, non-exporting or export-limited Projects should be appropriately accounted for. The utility may take the impacts of non-export or export limited generation on the calculation of daytime minimum load, when evaluating potential system impacts.		Load that is co-located with load-following, non-exporting or export-limited Projects should be appropriately accounted for. The utility may take the impacts of non-export or export limited generation on the calculation of daytime minimum load, when evaluating potential system impacts.	Accept JU edits - not clear that additional sentence is necessary, first sentence should allow freedom to review such projects.
Supplemental Review Penetration Screen(C)	The Interconnecting Utility will not consider as part of the aggregate Export Capacity for purposes of this screen Project Export Capacity, including combined heat and power (CHP) facility capacity and behind-the-meter or net-metered capacity, known to be already reflected in the minimum load data.		The Interconnecting Utility will not consider as part of the aggregate Export Capacity for purposes of this screen Project Export Capacity, including combined heat and power (CHP) facility capacity and behind-the-meter or net-metered capacity, known to be already reflected in the minimum load data.	The Interconnecting Utility will not consider as part of the aggregate Export Capacity for purposes of this screen Project Export Capacity, including combined heat and power (CHP) facility capacity and behind-the-meter or net-metered capacity, known to be already reflected in the minimum load data.	Accept REC edits - added for clarity.
Data Access			To ensure transparency and confirm that the proposal will not limit an interconnection customer's ability to access, review, and verify daytime minimum load calculations. The Coalition recommends that IREC's Supplemental Review Proposal be revised to specifically provide these interconnection customer's rights	(5)Applicants undergoing Supplemental Review will be able to access, review, and verify minimum load calculations except in cases where the minimum load data contains identifiable individual customer data	Added 860-082-006X(5) to address data issues
Data Length			Request ability for applicants to ask for use of additional data, currently set at 12 months, would like ability to use 13-24 months.		Staff did not propose adding additional months, Staff believes the transparency offered should address concerns.
Substation transformer backfeed screen	(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.				(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.