UM 2111

Combined Screens, Study Methods, and Modern Configurations & IEEE 1547 Workshop

6-20-2023

Oregon Public Utility Commission

Agenda

Item	Schedule	Time
Welcome – Process Update/Discussion	9:00	10 min
Line Configuration Screen	9:10	15 min
Eligibility	9:25	20 min
Minor Equipment Modifications	9:45	20 min
Length of Interconnection Agreements	10:05	20 min
Utility Handbooks	10:25	20 min
Break	10:35	10 min
Executed Agreements	10:55	20 min
Data Conversions	11:15	20 min
Network Screens	11:25	10 min
Export Controls	11:35	10 min
Applicant Options Meeting	11:40	5 min
Next Steps	11:50	10 min
Adjourn	12:00	

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Line Configuration Screen

- Staff Division 39 redline comparison with current requirements

	Joint Utilities	IREC
Primary Distribution Line Type	Type of Interconnection to Primary Distribution Line Required To Pass Screen	Type of Interconnection to Primary Distribution Line Required To Pass Screen
Three-phase, three-wire	Interface connection transformer high side is phase-to-phase	Interface connection transformer high side is phase-to-phase
Three-phase, four-wire	Interface connection transformer high side is: • Single-phase line-to-neutral • Three-phase line-to-neutral and effectively grounded	Interface connection transformer high-side is single-phase line-to-neutral
Three-phase, four-wire or mixed three-wire and four-wire	For inverter-based generation: the small generator facility uses medium voltage sensing for voltage protection with preferred default settings found in the interconnection requirements handbook. Or: Where appropriate the utility may extend the neutral wire to the point of interconnection to treat the small generator facility as an interconnection to a three-phase, four-wire system.	Interface connection transformer high side is three-phase, line-to neutral and effectively grounded, or For inverter-based generation interface connection transformer is • Yg-yg, or Yg-y, or • Yg-delta with the small generator facility using medium voltage sensing for voltage protection with preferred default settings found in the interconnection requirements handbook.

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Eligibility

- Division 29 Definition:

  (32) "Nameplate Capacity Rating" means maximum installed instantaneous power production capacity of the completed Facility, expressed in MW (AC), and measured at the Point of Interconnection, when operated in compliance with the Generation Interconnection Agreement and consistent with the recommended power factor and operating parameters provided by the manufacturer of the generator, inverters, energy storage devices, or other equipment within the Facility affecting the Facility's capability to deliver useful electric energy to the grid at the Point of Interconnection.

- Division 82 Definitions:

  (28) “Nameplate rating” means the sum total of maximum rated power output of all of a small generator facility’s constituent generating units and/or ESS as identified on the manufacturer nameplate in Alternating Current (AC), regardless of whether it is limited by any approved means.

  (43)“Small generator facility” means a facility, that operates in parallel with the distribution system, for the production of electrical energy that has a nameplate rating of 10 megawatts or less. A small generator facility may include an energy storage system, and does not include interconnection equipment, interconnection facilities, or system upgrades.

- Division 82 Revised Definition:

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

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Eligibility cont.

- Division 82 – Tier 1 requirements
  - The facility has an export capacity of 25 kilowatts or less and a nameplate rating of 50 kilowatts or less.
- Division 39 – based on generating capacity
  - For residential customer-generators of a public utility, these rules apply to net metering facilities that have a generating capacity of 25 kilowatts or less.
- *Staff would like to hear what parties think about the proposed change for Division 82, as well as potential changes to the Division 39 rules to allow for residential facilities of up to 50 kw nameplate rating with a maximum 25 kw export.*

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Minor Equipment Modifications

- Current proposal:

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

  (a) Includes a change or replacement of equipment that is a like-kind substitution in size, ratings, impedances, efficiencies, or capabilities of the equipment specified in the original interconnection application. Minor variations that do not affect safety, performance, or interoperability are acceptable;

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

  (c) Includes a reduction in the nameplate rating and/or export capacity of the small generator facility of 10 percent or less provided that a change made to a small generator facility 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, prior to making the change.

- ITA Proposal
  - Up to 60% reduction prior to system impact study
  - Additional 15% reduction prior to facilities study
  - No consideration for lower-queued projects
- *Staff is intrigued by the idea that greater changes can be made prior to the initiation of a study, in a manner that aids in, rather than harms, the efficient processing of projects in the queue or lower queued projects and would like to see if parties can identify a way to incorporate this into the current draft proposal without undue administrative burden or impacts to lower queued projects.*

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Length of Interconnection Agreements

- Current proposal:

(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 a different term can be mutually agreed upon between the interconnecting utility and customer.

- ITA propose agreement:
  - Should not expire prior to PPA expiration
  - Potentially last as long as life of facility (Roll-over rights?)
- *Staff sees the value in working to identify a reasonable solution to this challenge with the current proposal but has not seen enough discussion of the potential solutions at this point to recommend changes to the requirements on the length of the interconnection agreement and would like to hear more from stakeholders on this topic.*

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Utility Handbooks

- Initial Staff proposal :

  (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

- Revised Staff proposal:

  (b) Interconnection requirements handbook. Each public utility must post an interconnection requirements handbook on its public website. Prior to revising its interconnection requirements handbook, a public utility must provide public notice and an opportunity to comment and the public utility must respond to any comments received.

- *Staff would like feedback on this proposal; are parties amenable to the compromise. Does there need to be additional procedures included for raising issues of concern before the Commission?*

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Executed Agreements

- Current proposal
  - (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.
- Proposal Objections
  - Timeline too short for obtaining internal approval
  - Potential confusion, and process slowdown if Interconnection customers may make changes to utility-signed agreement
    - Require negotiations, or
    - Utility would need to re-sign agreement

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Executed Agreements (cont.)

- Potential approach if executed agreement needed
  - Additional time to provide agreement, 15 business days instead of five
  - Make clear any deposit must be provided by interconnection customer when counter-signed agreement returned.
- Revised proposal

  (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 and any required deposit to the public utility or request negotiation of a non-standard interconnection agreement within 15 business days of receipt of an executed interconnection agreement, the application is deemed withdrawn.
- *Staff appreciates the JU concern for what will help generators by reducing delays and would like to hear from stakeholders that represent generators about whether they agree that the JU proposal would be more helpful for generators.*

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Data Conversion

- The Joint Utilities (JU) include a proposal to update circuits on an as needed basis as they receive interconnection applications under the following two conditions:
  - (1) the aggregated capacity on the feeder including the new generator is equal to or greater than 90 percent of the relevant minimum load, and (2) the aggregated capacity on the feeder excluding the new generator is less than 100 percent of the relevant minimum load
- Other parties would like a date certain for updated data
- It appears majority of data could be updated within a year, although PacifiCorp could potentially need more time.
- *Staff would like to know if there are any updates to the JU and Energy Trust coordination, and if so, have any efficiencies been unearthed.*

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Network Screens

- Original proposal allowed for aggregate nameplate rating up to 50% of spot or area-network load
- Safety issues raised by JU – desire to limit ratio to 20%
- JU also want option for customer estimates eliminated (subpart C)
- Revised proposal

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

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

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

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

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

- Incorporates 20%
- Maintains customer estimate option – under subpart (D) the utility can make an estimate, explaining why other options are inappropriate
- *Staff seeks feedback about situations in which the good-faith estimate under Section D does not address their concerns?*

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Export Controls

- Original proposal inconsistent
  - 860-082-003X (3)(a)(A)-(B) allow for less than 2.0 second delay on circuits using high-speed reclosing
  - 860-082-003X (3)(b)(A) did not include provision
- IREC – less than 2.0 second reclosing not needed in these cases, inverters will trip the facility
- Staff has concerns that the inverters will not perform as advertised – and look to Odessa, TX disturbances, among others
- Revised proposal allows for less than 2.0 seconds for all three situations listed.

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Applicant Options Meeting

- Current proposal requires utility to schedule a meeting at a mutually agreeable time within 15 days of an interconnection applicant requesting a meeting.
- JU argue utility should not be in violation of the rules if the applicant's representatives or consultants are not available during the times when the necessary utility personnel are available within the 15-business-day window
- Staff does not believe this needs addressing at this point
  - Parties should be able to agree on time that will work
  - Commission will recognize if the provision is abused
  - If there is evidence of applicants not acting in good-faith Staff will be able to revisit the rule.

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Next Steps

- Staff to prepare Public Meeting memo requesting to move to formal
- AHD will open formal rulemaking docket post memo in docket
- Formal Rulemaking brought to future Public Meeting once materials complete

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