

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Commission's)
Review of Chapter 4901:1-22, Ohio) Case No. 12-2051-EL-ORD
Administrative Code, Regarding)
Interconnection Services.)

ENTRY

The Commission finds:

- (1) Section 119.032, Revised Code, requires all state agencies to conduct a review, every five years, of their rules and to determine whether to continue their rules without change, amend their rules, or rescind their rules. The rules in Chapter 4901:1-22, Ohio Administrative Code (O.A.C.), set forth electric interconnection services and standards.
- (2) On October 17, 2012, the Commission issued an entry requesting comments and reply comments to Commission Staff's (Staff) proposed rule changes and business impact analysis.
- (3) Commission Staff (Staff) has proposed further changes to Chapter 4901:1-22, O.A.C., that were not clearly identified or addressed in the Commission entry requesting comments and reply comments filed on October 17, 2012. Therefore, the Commission believes that a supplemental comment and supplemental reply comment period would be beneficial. Supplemental comments and supplemental reply comments should be filed for the limited purpose of addressing the issues presented in this entry. Supplemental comments should be filed by January 31, 2013 and supplemental reply comments should be filed by February 7, 2013.
- (4) Staff recommends that the Level 2 expedited review procedure, as proposed in Rule 4901:1-22-07, O.A.C., be revised to incorporate a new method of establishing eligibility for Level 2 expedited review. The Commission is seeking comments on Staff's recommendation. Staff's recommendation is to scale the capacity limit to reflect other system design characteristics at the point of interconnection that impact the safety and reliability of generator interconnection. Design features include the voltage level of the distribution circuit to which a proposed generator would interconnect, as well as the

distance between a proposed generator and the substation serving it. Generators proximate to their local substation on a main distribution line are less likely to create impacts justifying detailed study than generators located at the end of a long distribution line. The following table illustrates how these considerations can be incorporated into the proposed framework.

Line Voltage	Fast Track Eligibility- regardless of location	Fast Track Eligibility- on a 600 amp line and < 2.5 feeder miles from substation
< 5kV	< 1MW	< 2 MW
5kV ≤ 15 kV	< 2MW	< 3 MW
15 kV ≤ 30 kV	< 3MW	< 4 MW
30 kV ≤ 69 kV	< 4MW	< 5 MW

Based on generator location, this scheme increases expedited treatment eligibility to capacity limits as high as five megawatts, without compromising the safety and reliability of the distribution system. The values presented in the above table are for illustration purposes only. Different threshold values may better reflect distribution system topologies in Ohio; therefore the Commission requests that stakeholders propose any revisions deemed necessary to better align this framework to local conditions.

- (5) Staff is considering modifying Ohio’s supplemental review language to clearly define the technical considerations addressed in the process. Ohio’s current Level 2 procedures, found in Rule 4901:1-22-07, O.A.C., provide for “additional review” of a project in the event that it fails one or more of the Level 2 screening criteria. Staff has proposed importing additional language from the Federal Energy Regulatory Commission’s Small Generator Interconnection Procedures (SGIP) into the existing additional review process to specify a procedural framework and timeframe for equipment modification, supplemental review, and a customer options meeting.¹

The purpose of supplemental review is to provide additional time for utilities to address any easily identifiable issues impacting the

¹ 18 C.F.R. Part 35, 70 FR 34247 (June 13, 2005).

safe and reliable interconnection of a generator that can be determined without Level 3 Standard Review. If no such determinations can be made, Level 3 Standard Review would be applied. Projects would be limited to a single supplemental review. Staff recommends that applicants be responsible for any study-related costs. The Commission seeks comments on this recommendation.

- (6) Staff proposes adopting three additional technical screens. The three additional technical screens would be designed to facilitate the evaluation of projects that fail one or more of the initial Level 2 expedited review procedure criteria in Rule 4901:1-22-07, O.A.C.; specifically the commonly-failed 15 percent capacity limit threshold.² The Commission seeks comments from stakeholders on this proposal.

The first screen would apply a supplemental penetration threshold to determine whether a generator will cause aggregate generation capacity on a line section to exceed 100 percent of minimum load, measured when the generator is expected to be operating. Absent minimum load data, this screen would set the threshold for aggregate generation capacity on the circuit at 30 percent of peak load. If a generator passes the screen, it would be subject to two additional screens. The second screen would apply power quality and voltage tests to determine whether a full study is required to identify power quality and voltage issues. The third screen would evaluate whether the location of a proposed facility or the aggregate generation on the line section could adversely impact safety and reliability, and if so, whether those issues could be addressed without requiring Level 3 Standard Review.

The adoption of these additional screens would provide utilities with specified parameters for addressing impacts that may be identified with only limited additional review. Improving the clarity of supplemental review creates a standardized review procedure for utilities to follow that would potentially increase the efficiency and transparency of the process. Additional review

² 18 C.F.R. Part 35, 70 FR 34247 (June 13, 2005): "For interconnection of a proposed Small Generating Facility to a radial distribution circuit, the aggregated generation, including the proposed Small Generating Facility, on the circuit shall not exceed 15 % of the line section annual peak load as most recently measured at the substation. A line section is that portion of a Transmission Provider's electric system connected to a customer bounded by automatic sectionalizing devices or the end of the distribution line."

would also reduce the number of projects studied at the highest and most expensive level of review, saving applicants and utilities time and resources. Finally, transparently establishing the technical issues addressed during supplemental review could provide applicants with useful knowledge in project site selection and system planning.

Appendix A provides sample language illustrating how these screens could be incorporated into Staff's proposed supplemental review language. The Commission is seeking comments to recommend modifications to the proposed screens that might improve their application in Ohio. Additionally, the Commission requests comments on whether supplemental review study costs should be recovered from applicants through a flat, non-refundable fee or through an hourly rate. If a flat fee is assessed, the Commission seeks comments on recommendations for an appropriate amount.

- (7) On October 17, 2012, the Commission issued an entry requesting comments on two proposals intended to improve information accessibility for developers: the creation of a field-certified equipment database and a publically accessible distribution interconnection queue. Staff believes that there may be more options available to improve information accessibility for developers and recommends that a pre-application report be adopted to promote information accessibility. Staff has put forth a proposal for what the pre-application report should contain. The Commission is seeking comments from stakeholders on what other alternative could be adopted to improve information accessibility for developers and on Staff's proposal to adopt a pre-application report.

The pre-application report would provide developers with a formal channel for requesting a specified list of readily accessible information concerning system design characteristics at one or more points of interconnection on a utility's system. This service would be available to any customer willing to pay the utility a fixed fee. Specific items that could be included in the pre-application report can be found in Appendix B. Through the pre-application report, developers could access data relevant to making informed siting and project planning decisions. Likewise, utilities could benefit from increases in the number of viable, low-impact interconnection requests. Improved siting decisions afforded by

the pre-application report would potentially streamline the interconnection process by reducing the number of larger projects requiring detailed Level 3 study.

Pre-application reports would be issued under the assumption that some information provided is subject to continually changing system conditions and utilities should not be held liable if certain data is no longer accurate. Moreover, pre-application reports would not obligate the utility to conduct any study or other analysis of the proposed generator in the event that certain data is not available. However, the applicant would be proportionally refunded for each item that is not available in the report. The Commission is seeking comments on alternative means of improving information accessibility for developers and on Staff's proposal for a pre-application report.

The Commission is also seeking comments on whether the items specified in Staff's proposed pre-application language should be added, removed, or modified. Additionally, the Commission requests comments on whether report costs should be recovered from applicants through a flat, non-refundable fee or through an hourly rate. Staff has proposed a flat report fee of \$300, and the Commission seeks comments on this proposal.

- (8) The Commission seeks comments on whether the technical screen set forth in Rule 4901:1-22-07(B)(1)(c) should be modified to improve its ability to identify generators in need of full study. As written, this screen may not identify the issue of primary concern to small distribution-level interconnections: whether the proposed generator has interdependences with other queued generators on the transmission or sub-transmission system. Staff proposes screen language requiring additional study if the proposed generator is in an area where there are known or posted transient stability limitations or if the proposed generator has interdependencies, known to the electric distribution utility (EDU), with earlier queued transmission system interconnection requests. The Commission seeks comments on the technical screen and Staff's proposed screen language.
- (9) The Commission seeks comments on whether the screen set forth in Rule 4901:1-22-07(B)(1)(k) should be modified to set the aggregate generation capacity limit on a single phase shared secondary at sixty-five percent the transformer nameplate power rating as

opposed to a static capacity threshold of ten kilowatts. Staff believes that doing so would more accurately reflect small transformer limitations while scaling the aggregate capacity threshold to account for larger transformer capacities. A recent Sandia National Laboratory study suggests that this is an appropriately conservative threshold, which would affectively identify high-risk interconnection requests.³ The Commission seeks comments on the screen and Staff's proposed modification to the screen.

- (10) The Commission requests comments on the following questions related to backup electricity supply for partial-service customers, including backup service for unplanned outages and planned system maintenance. Staff recognizes the importance of ensuring that the benefits provided by distributed generation technologies are appropriately recognized and fairly balanced with the EDUs' costs of providing infrastructure support for interconnection services. Staff recommends that standby tariffs be simplified to enable the accurate estimation of partial service costs for the potential development and operation of distributed generation in Ohio, including cogeneration systems. Answers to the following questions have been requested by Staff and are intended to identify ways in which these goals can be accomplished, as well as to identify methods of aligning existing rates with the current regulatory and market environment.
- (a) Given the current regulatory framework in Ohio, does it make sense for EDU's to offer a standby tariff for generation-related services? If not, should the standby tariff be limited to transmission and distribution-related services and the generation service linked to reflect either (1) the SSO rate contained in the full-service tariff or (2) a rate offered by a competitive retail electric service (CRES) provider?
- (b) Currently, the majority of standby rates link the reservation demand charge for distribution services to the full-service rates, based on voltage classification. Would it be beneficial to establish a uniform

³ R. Broderick, A. Ellis "Evaluation of Alternatives to the FERC SGIP Screens for PV Interconnection Studies." (2011). Sandia National Laboratories, Albuquerque, New Mexico.

provision for customers willing to take interruptible service? Under such a rate, the customer would only pay for distribution service actually used (on a pro-rated basis) during a given billing period for the contracted load, given those customers are willing and able to take interruptible service during peak periods.

- (c) Likewise, would it be useful to develop a similar provision for distribution rates charged for planned-maintenance services, during non-peak periods, i.e. pro-rated based on actual use?
- (d) What is the best way to develop a pro-rated rate structure for distribution services? Would it be beneficial to establish a universal standby rate template, used by all of the EDUs in the state?
- (e) Should each generator / customer be charged a rate that accounts for the benefits provided by a diversity of units? If so, should the several (group of) units providing diversity be limited to those within a service territory, or could the diverse group of units extend beyond the service territory?

It is, therefore,

ORDERED, That all interested persons or entities wishing to file supplemental comments with the Commission on the proposed rule changes do so no later than January 31, 2013, and file supplemental reply comments by February 7, 2013. It is, further,

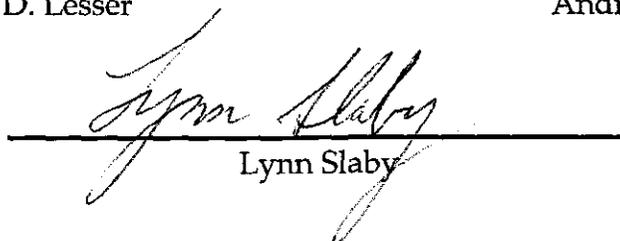
ORDERED, That an electronic notice or paper copy of this entry be served upon all electric utilities in the state of Ohio, all certified competitive retail electric service providers in the state of Ohio, the Electric-Energy industry list-serve, and all other interested persons of record.

THE PUBLIC UTILITIES COMMISSION OF OHIO


Todd A. Spitchler, Chairman


Steven D. Lesser


Andre T. Porter


Lynn Slaby

BAM/dah

Entered in the Journal
JAN 16 2013



Barcy F. McNeal
Secretary

4901:1-22-07 (E) Level 2 supplemental review

- (1) If the customer requests that the EDU perform a supplemental review, the customer shall agree in writing within 15 business days of the offer, and submit the nonrefundable supplemental review fee of \$(____), or the Application shall be deemed withdrawn. Within twenty-five business days following receipt of the supplemental review fee, the EDU shall perform a supplemental review using the screens set forth below and notify the applicant of the results. If the proposed interconnection fails one or more of the supplemental review screens, the EDU shall include with the notification copies of the analysis and data underlying the EDU's determinations under the screens.
 - (a) Where 12 months of Line Section minimum load data is available, can be calculated, can be estimated from existing data, or determined from a power flow model, the aggregate Generating Facility capacity on the Line Section is less than 100% of the minimum load for all Line Sections bounded by automatic sectionalizing devices upstream of the proposed distributed generation facility. If the minimum load data is not available, or cannot be calculated or estimated, the aggregate Generating Facility capacity 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 distributed generation facility.
 - (i) The type of generation used by the proposed distributed generation facility will be taken into account when calculating, estimating, or determining circuit or Line Section minimum load relevant for the application of screen (a) Solar photovoltaic (PV) generation systems with no battery storage use daytime minimum load (i.e. 10 am to 4 pm for fixed panel systems and 8 am to 6 pm for PV systems utilizing tracking systems), while all other generation uses absolute minimum load.
 - (ii) When this screen is being applied to a distributed generation facility that serves some onsite electrical load, only the net export in kilowatts, if known, that

may flow into EDU's system will be considered as part of the aggregate generation.

- (iii) The EDU will not consider as part of the aggregate generation for purposes of this screen generating facility capacity known to be already reflected in the minimum load data.
- (b) In aggregate with existing generation on the Line Section: (1) the voltage regulation on the line section can be maintained in compliance with relevant requirements under all system conditions, (2) the voltage fluctuation is within acceptable limits as defined by IEEE 1453 or utility practice similar to IEEE 1453, and (3) the harmonic levels meet IEEE 519 limits at the Point of Interconnection.
- (c) The location of the proposed distributed generation facility and the aggregate generation capacity on the Line Section do not create impacts to safety or reliability that cannot be adequately addressed without application of the Level 3 Standard Review. The EDU may consider the following and other factors in determining potential impacts to safety and reliability in applying this screen.
 - (i) Whether the Line Section has significant minimum loading levels dominated by a small number of customers (i.e. several large commercial customers).
 - (ii) If there is an even or uneven distribution of loading along the feeder.
 - (iii) If the proposed distributed generation facility is located in proximity to the substation (i.e. <2.5 electrical line miles), and if the distribution line from the substation to the customer is composed of large conductor/feeder section (i.e. 600A class cable)?
 - (iv) If the proposed distributed generation facility incorporates a 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.

- (v) If operational flexibility is reduced by the proposed distributed generation facility, such that transfer of the line section(s) of the distributed generation facility to a neighboring distribution circuit/substation may trigger overloads or voltage issues.
 - (vi) If the proposed distributed generation facility utilizes certified anti-islanding functions and equipment.
- (2) If the proposed interconnection meets the supplemental review criteria, the application shall be approved and the EDU will provide the applicant a standard interconnection agreement within five business days after the determination and include a timetable for the physical interconnection of the applicant's proposed distributed generation facility to the EDU's system.

4901:1-22-04 (B) Pre-Application

- (1) The electric distribution utility (EDU) will designate an employee or office from which information on the requirements for EDU's application review process can be obtained through an informal request by the applicant during a scoping meeting that includes discussion of the following:
 - (a) The applicant's proposed interconnection of a distributed generation facility at a specific location on the EDU's distribution system.
 - (b) Qualifications under EDU's level 1, level 2 or level 3 review procedures.
 - (c) Existing EDU studies relevant to the interconnection request.
 - (d) Reasonable requests from the applicant for EDU information including relevant system studies as well as other material useful to an understanding of an interconnection at a particular point on the system to the extent such information does not violate confidentiality provisions of prior agreements or critical infrastructure requirements. The EDU shall comply with reasonable requests for such information.
- (2) In addition to the information described in Subsection (1), which may be provided in response to an informal request, an applicant may submit a formal request along with a non-refundable processing fee of \$300 for a preapplication report on a proposed project at a specific site. The EDU shall provide the pre-application data described in Subsection (3) to the Applicant within ten business days of receipt of the written request and payment of the \$300 processing fee.
- (3) The pre-application report will include the following information:
 - (a) Total capacity (in megawatts) of substation/area bus, bank or circuit based on normal or operating ratings likely to serve proposed site.
 - (b) Existing aggregate generation capacity (in megawatts) interconnected to a substation/area bus, bank or circuit (i.e., amount of generation online) likely to serve proposed site.

- (c) Aggregate queued generation capacity (in megawatts) for a substation/area bus, bank or circuit (i.e., amount of generation in the queue) likely to serve proposed site.
 - (d) Available capacity (in megawatts) of substation/area bus or bank and circuit most likely to serve proposed site (i.e., total capacity less the sum of existing aggregate generation capacity and aggregate queued generation capacity).
 - (e) Substation nominal distribution voltage and/or transmission nominal voltage if applicable.
 - (f) Nominal distribution circuit voltage at the proposed site.
 - (g) Approximate circuit distance between the proposed site and the substation.
 - (h) Relevant line section(s) peak load estimate, and minimum load data, when available.
 - (i) Number and rating of protective devices and number and type (standard, bi-directional) of voltage regulating devices between the proposed site and the substation/area. Identify whether substation has a load tap changer.
 - (j) Number of phases available at the site.
 - (k) Limiting conductor ratings from proposed point of interconnection to distribution substation.
 - (l) Based on proposed point of interconnection, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.
- (4) The pre-application report need only include pre-existing data. A pre-application report request does not obligate the EDU to conduct a study or other analysis of the proposed generator in the event that data is not readily available. If the EDU cannot complete some of a preapplication report due to lack of available data, the

EDU shall provide Applicant with a pre-application report that includes the data that is available. For each item of unavailable data, the utility will refund \$25 of the processing fee to the applicant. The provision of information on "available capacity" pursuant to Item (d) does not imply that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process, and data provided in the pre-application report may become outdated at the time of submission of the complete interconnection request.