Filing Receipt

Filing Date - 2023-07-21 12:32:42 PM

Control Number - 54233

Item Number - 58

PROJECT NO. 54233

TECHNICAL REQUIREMENTS AND INTERCONNECTION PROCESSES FOR DISTRIBUTED ENERGY RESOURCES (DERs)	**§ § § §**	**BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS**

ONCOR ELECTRIC DELIVERY COMPANY LLC'S INITIAL COMMENTS ON COMMISSION STAFF'S REDLINE DISCUSSION DRAFT OF 16 TAC § 25.210

TO THE HONORABLE PUBLIC UTILITY COMMISSION OF TEXAS:

Oncor Electric Delivery Company LLC ("Oncor") files these initial comments on the Public Utility Commission of Texas ("Commission") Staff's redlines to the discussion draft language of proposed new Commission rule 16 Tex. Admin. Code ("TAC") § 25.210 included in Commission Staff's June 9, 2023 and June 23, 2023 memoranda in this Project.

Oncor hopes that its comments and suggested edits, which are reflected in redline format on Attachment A hereto, will aid future discussions on the discussion draft and will help inform the contents of a Proposal for Publication of this new rule. In addition to its specific edits and comments set forth on Attachment A, Oncor would also like to raise the following, more general comments for consideration.

I. GENERAL COMMENTS

First, Commission Staff's redlines have modified draft § 25.210 so that it applies to distributed energy resources ("DERs") that either have a nameplate capacity over 250 kilowatts ("kW") or are interconnecting in the Electric Reliability Council of Texas ("ERCOT") power region and registering with ERCOT. To put this proposed threshold for the rule's applicability into context, Oncor approved approximately 26,000 DER interconnections in 2022, and less than 20 of those DERs had a capacity over 250 kW. Existing rules 16 TAC § 25.211 and § 25.212 provide a well-established structure for the interconnection process, impact studies, timeframes, and technical operating requirements applicable to the overwhelming majority (approximately 99%) of DERs that have a capacity of 250 kW or less. Annual reporting to the Commission shows that this new rule, 16 TAC § 25.210, would apply to less than 1% of DER projects each year. In Oncor's experience, this less than 1% of DER projects consists of a mix of commercial backup generators, settlement-only generators, and grid resources under control and dispatch by the independent system operator. While this group of DERs comprises a very small portion of all

DER projects, the uniqueness of the DERs within this small subset necessitates tremendously different analysis and processes when it comes to impact studies, upgrade costs, and interconnection timeframes. The draft new rule, 16 TAC § 25.210, recognizes these differences and appropriately seeks to modify the impact study process, interconnection-related costs, and interconnection timeframes for this very small, but very unique subset of DER projects.

Oncor is amenable to a 250kW threshold for the applicability of this new rule. However, as Oncor has previously commented, a threshold of 1 megawatt would be more consistent with ERCOT registration requirements, which trigger certain protocol and guide obligations. Oncor supports the applicability of 16 TAC § 25.212 (the rule that is currently being revised in this Project to address technical and operational requirements for parallel operation of interconnected DERs), to the technical and operational requirements of all DERs, with certain specific requirements for ERCOT-registered DERs to be developed in the protocols and guides. Oncor appreciates having the opportunity, before submitting these comments on § 25.210, to review Commission Staff's latest draft language for § 25.212 and for recent workshop discussions with Commission Staff and stakeholders on the intended applicability of § 25.212. Oncor respectfully reserves its ability to offer further comments on § 25.210 in the future once Oncor is able to fully review how this new rule and revised § 25.212 work together when a Proposal for Publication is put forward.

Next, Oncor's redline edits shown in Attachment A hereto revise the defined term in (b)(1) of "Allowable Expenditure" to "Standard Allowance" so that this rule uses the same term as used in Oncor's Commission-approved tariff when discussing the allowance applicable to new or added load. Likewise, in the contribution in aid of construction ("CIAC") provision in subsection (g)(3), Oncor replaced the reference to "allowable expenditure" with "standard allowance" and added language to clarify that this term refers to the amount "that may be applicable only to load-serving costs as calculated in accordance with the DSP's commission-approved tariff provision on standard allowances, if any." With respect to the discussion of an allowance, it is important to note that Oncor does not currently provide an allowance to DERs other than distributed energy storage resources ("DESRs") specifically. This is because the definition of standard allowance in Oncor's tariff applies to load-serving costs only, and so the resource must have a load component of some sort in order to be eligible for an allowance. Oncor is not aware of any other distribution service provider ("DSP") that grants an allowance to any type of DER whatsoever, and Oncor is not obligated to continue providing its standard allowance to DESRs with a load component in the

future. For these reasons, Oncor urges Commission Staff to ensure that the rule is written in a way that avoids giving the impression that all DERs are entitled to an allowance to put towards their respective CIAC obligations.

Oncor also has concerns with draft subsection (g)(3)(D) that requires the DSP to provide invoices to the DER provider as part of a reconciliation of the DSP's actual costs incurred for the interconnection against the CIAC payments made by the DER provider. Several factors and internal processes within Oncor would prevent Oncor from being able to provide invoicing details for all of the various costs associated with a particular DER's interconnection, such as the facts that Oncor does not have an internal system in place to track the time and expenses of each and every Oncor employee who works on a particular project, that it does not have a way to track the costs associated with every single piece of equipment that is purchased and then utilized for a particular project, and that it has confidential master service agreements in place with vendors and contractors that prohibit the disclosure of confidential and/or proprietary pricing information. In light of these facts, Oncor instead currently provides to the DER provider a good-faith estimate of utility upgrade costs with the results of the impact study. Upon execution of the interconnection agreement and payment by the DER provider, Oncor then coordinates closely with the DER provider on any changes that would impact the costs. When circumstances arise such as cancellation of a project by the DER developer, Oncor's routine practice is to review actual costs incurred and refund either a portion or all of the payments made by the DER developer. Oncor believes this process appropriately balances the DER provider's desire to see support and justification for the level of CIAC it has paid, on the one hand, and the concerns that DSPs like Oncor face in providing overly burdensome and/or confidential pricing information to support each and every cost related to each interconnection, on the other hand. Oncor would therefore encourage Commission Staff to allow DSPs to address the need for reconciliation and refunds within the DSPs' respective tariffs and according to their own practices. If the Commission determines this rule should uniformly require this across all DSPs, then Oncor has provided comments below in its redline of the draft rule language that support a simplified reconciliation comparing the total of actual utility costs to the total of payments from the DER provider. Oncor's redline comments clarify that this reconciliation may result in additional payment due from the DER developer to the DSP, not just reimbursement from the DSP to the DER provider.

Additionally, Oncor notes that in the pre-screen study provisions contained in draft

subsection (e) of the rule, Oncor has added language that, among other things, explicitly clarifies what a pre-screen study is *not* intended to accomplish, given that some DER providers may have incorrect assumptions as to what is accomplished or "reserved" on their behalf through the completion of a pre-screen study by the interconnecting DSP. Specifically, Oncor has added language in (e) to clarify that the pre-screen study does not represent a commitment by either the DSP or the DER provider to procure or utilize particular equipment; that the DSP is not guaranteeing the results reflected in the pre-screen study in any manner; that as part of the pre-screen study process, the DSP is not required to complete the type of detailed engineering design or cost estimates that are performed for an impact study; and that the pre-screen study does not take the place of or obviate the need for the required DER interconnection studies.

In subsections (f)(2)(C)(iii) and (g)(3)(A), Oncor has also provided examples of general cost categories for which a DSP should strive to provide estimated itemized costs. The intention behind adding these specific cost categories is to clarify that a DSP cannot — due to operational and proprietary reasons — provide an itemized list of costs specific to each unique piece of equipment, for materials that may be purchased in bulk for multiple projects, or for each Oncor employee's time spent on each DER seeking to interconnect.

Regarding subsection (g)(4), Oncor agrees with stakeholder comments in the workshops that the applicability of this section should be limited to only to municipally owned utilities and electric cooperatives. In general, easements and land for DER providers and utilities to complete interconnections is becoming more difficult to obtain. Land owners have expressed concerns with utility easement language that would allow utilities to abandon interconnections in place for a DER that ceases operations or retires. Oncor, however, believes that the interconnection agreement would be the suitable place to address terms that would require DER providers to the pay the utility cost for removal of these facilities, especially in circumstances where these terms are necessary for land owners to grant easements and land rights to support the DER interconnection.

Finally, Oncor respectfully reminds Commission Staff of Oncor's previously submitted suggested revisions to the draft Distribution Resource Interconnection Agreement and the draft Application for Interconnection and Parallel Operation of a Distribution Resource, both of which would be applicable to the DERs covered by draft rule 16 TAC § 25.210. Oncor submitted its revisions to these documents as part of its January 6, 2023 redline of this draft new rule (although at the time Oncor submitted its redline, this draft rule language was presented as a repeal and

replacement of existing rule 16 TAC § 25.211, rather than as new rule § 25.210). To the extent proposed rule § 25.210 will include an Interconnection Agreement and an Application for Interconnection for DERs subject to § 25.210, Oncor requests that its January 6, 2023 revisions be incorporated into the upcoming Proposal for Publication. In the event Commission Staff includes a version of an Interconnection Agreement or an Application for Interconnection for DERs that differs from the versions Oncor submitted with its January 6, 2023 comments, then Oncor respectfully reserves its opportunity to further comment on those drafts through the Proposal for Publication process.

II. CONCLUSION

As Oncor has previously commented, the unprecedented amount and complexity of the changes to the grid and interconnecting utilities' cost of service that will be driven by DERs seeking to interconnect justify a thorough discussion among all stakeholders of the process and requirements for interconnection covered in this draft § 25.210 and the technical requirements that will be covered in draft rule § 25.212. Oncor appreciates the effort and time expended by Commission Staff in developing the redlines filed in this Project, which have taken into account suggestions and concerns previously raised by Oncor and other stakeholders in this Project. Oncor also appreciates the opportunities to discuss Commission Staff's redlines at the recent workshops held in this Project as well as this opportunity to submit suggested edits and comments on Commission Staff's redlines. Oncor respectfully requests Commission Staff's full consideration of the comments set forth above and in the redline edits attached hereto.

Respectfully submitted,

Oncor Electric Delivery Company LLC

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ATTORNEYS FOR ONCOR ELECTRIC DELIVERY COMPANY LLC

ATTACHMENT A
TO ONCOR'S COMMENTS

§25.210. Interconnection of Distribution Energy Resources (DERs) with a Nameplate Capacity Over 250kW for Parallel Operation.

(a) **Application.** This section applies to distribution service providers (DSPs), distributed energy resource (DER) providers, and DERs with a nameplate capacity over 250kW or if interconnecting in the Electric Reliability Council of Texas (ERCOT) power region and registering with ERCOT, interconnected or seeking to interconnect with a DSP's distribution system in the state of Texas, except as provided under Public Utility Regulatory Act (PURA) § 35.037, or to the extent provided by federal law.

(b) **Definitions.** The following words and terms when used in this section have the following meanings, unless the context indicates otherwise:

(1) ~~**Allowable Expenditure**~~**Standard Allowance** – An amount applicable to load-serving costs that may be included in ~~the~~one or more DSP's commission-approved tariffs and that may be applicable to one or more types of DER providers, unless a different amount or calculation is otherwise provided by commission rules.

(2) **Certified equipment** -- A specific generating and protective customer equipment system that has been certified by a National Recognized Testing Lab (NRTL) as complying with applicable portions of UL-1741 and IEEE-1547 standards, as determined by the distribution utility relating to safety and reliability when paralleling with the utility grid at the time of interconnection.

Commented [A1]: Oncor renamed this "Standard Allowance" so that it uses the same term used in Oncor's tariff that applies to new or added load. We do not currently have an allowance for anyone other than a DESR; there must be a load component of some sort to get an allowance. Oncor also believes it is the only DSP that grants DESRs an allowance, and we are not obligated to continue doing so. Thus, there is no need to address an allowance in this rule because not everyone offers it. Instead, this should be taken up in conjunction with the broader cost discussion.

(3) **Distributed natural gas generation facility** -- A DER installed on the DER provider's side of the meter that uses natural gas to generate not more than two megawatts (MW) of electricity.

(4) **Distribution energy resource (DER)** -- A source of electric power connected at a voltage of less than 60 kilovolts (kV), that can be interconnected in parallel operation to the distribution system. The term includes devices capable of injecting active power such as generators, energy storage systems, and distributed renewable generation facilities as defined in § 25.217 of this title (relating to Distributed Renewable Generation).

Commented [A2]: Oncor is amenable to including batteries in this definition, with the caveat that cost recovery issues will be addressed separately from these provisions in this rule, either in Project No. 54224 or elsewhere.

(5) **DER provider** -- Any entity operating a DER in Texas.

(6) **Distribution system** -- A DSP's electric delivery system operating under 60 kV.

(7) **Interconnection** -- The physical connection of a DER to a distribution system in accordance with the requirements of this section to enable parallel operation with the distribution system.

(8) **Network** – Two or more utility primary distribution feeder sources electrically connected on the secondary ~~(or low voltage)~~ side to form a power source for one or more customers. A network is designed to maintain service to the customers even after the loss of one of these primary distribution feeder sources.

Commented [A3]: This does not accurately describe some of Oncor's network configurations. On Oncor's networks, there are places where the high side and low side of the transformer use the same voltage (i.e., there is no "low voltage" side).

(9) **Parallel operation** -- The operation of a DER while the DER is interconnected to the distribution system.

(10) **Point of interconnection** -- Any point where the electrical conductors of the distribution system are interconnected to a DER's conductors and where any

transfer of electric power between the DER and the distribution system takes place, such as the switchgear near the meter.

(11) **Protective Function** – A function carried out using hardware and, potentially, software that is designed to ~~prevent~~ respond to unsafe operating conditions ~~from occurring~~ before, during, and after the interconnection of a DER with a distribution system. For purposes of this definition, unsafe operating conditions are conditions that, if left uncorrected, would result in harm to personnel, damage to equipment, unacceptable system instability or operation outside legally established parameters affecting the quality of service to other customers connected to the distribution system.

(12) **Stabilized** – A distribution system is considered stabilized when, following a disturbance, the distribution system returns to the normal range of voltage and frequency for a duration of no less than two minutes, unless a shorter timeframe is specifically permitted by the interconnecting DSP. ~~A shorter time may be mutually agreed to by the DSP and DER provider.~~

~~(13) **Substantial modification** – For a given DER, a change in the fuel type of one or more of the energy resources at the facility, the replacement of any inverter or protective relay, or an increase in the facility's capacity (kW output) by more than 10%.~~

(c) **Requirement for interconnection of a DER.** A DER may ~~not~~ be interconnected with a DSP's distribution system ~~unless~~ if the criteria of this subsection are met and, as applicable, maintained on an ongoing basis.

Commented [A4]: If the DSP insists on the 2 minute period, it is due to a specific system reason or need; thus, there is not room for agreement with the DER provider. But it is reasonable to allow for situations when the DSP determines and communicates that a shorter time is acceptable. For example, Oncor has customers who have back-up generation that transfers load back to the Oncor system after stabilization on 5 minute intervals. Coordination with other DERs would be needed to avoid destabilizing the DSP feeder.

Commented [A5]: This definition seems unnecessary in light of the "unauthorized modifications" provision in (d)(2)(F).

(1) A DER provider must comply with the technical and operational requirements of §25.212 of this title ~~on an ongoing basis upon interconnection of the DER with the distribution system~~.

(2) For a given DER, a DER provider must have a currently effective executed interconnection agreement with the DSP using the form prescribed by the commission and must have received permission to operate from the DSP following successful commissioning and testing. If the DER provider has registered as a resource with the applicable independent system operator, then the DER provider must also have permission to operate from the independent system operator.

(d) **Terms of service.** A DSP must provide service to an interconnected DER under the following terms.

(1) **Prohibited costs.** A DSP must not charge a DER provider charges assessed for the disconnection of a DER at the order of a DSP in accordance with subparagraph (3)(D)-(E) of this subsection.

(2) **DSP service obligations**. A DSP must comply with the requirements of this paragraph when providing service to a DER interconnected to the DSP's distribution system.

(3) **Disconnection and reconnection.** A DSP may only disconnect a DER from the DSP's distribution system in accordance with the conditions of this paragraph.

(A) **Termination of interconnection agreement.** Upon expiration or termination of the executed interconnection agreement with the DER provider, in accordance with the terms of the executed interconnection agreement, the DSP may disconnect the DER.

Commented [A6]: This language seems redundant, given the "maintained on an ongoing basis" language above in (c).

Commented [A7]: The standard practice is for a DER provider to sign the interconnection agreement before final commissioning and relay testing.

Additionally, ERCOT checklists will apply to registered resources. Thus, permission to operate from the DSP and possibly the independent system operator will be needed to maintain interconnection.

Commented [A8]: Allows flexibility of any testing requirements from the DSP and not just on relays. Example: 100 ms transfer switches that utilize programmable logic controls.

(B) **Safety and reliability caused by DER.** Upon the DER provider discovering an issue that represents a threat to public safety, to the safety of the DSP's or DER provider's personnel, to the safety of the DSP's customers, or to the reliability and continuity of electric service, then the DER provider must immediately disconnect from the DSP's distribution system and notify the DSP. When a DSP becomes aware (either through the DSP's own discovery or upon receiving notice from the DER provider) of an issue that represents a threat to public safety, to the safety of the DSP's or DER provider's personnel, to the safety of the DSP's customers, or to the reliability and continuity of electric service then the DSP must immediately disconnect the DER if necessary to resolve or address the issue. The DSP shall take reasonable steps to notify the DER provider of a disconnection due to safety or reliability reasons as soon as possible after the DSP decides that it will disconnect the DER provider. If the interconnected DER is the cause of a safety or reliability issue, such an issue must be resolved prior to reconnection, and in accordance with subsection (f) and (h) of this section, a DSP may require:

Commented [A9]: This step will help ensure the safety and reliability of the distribution system. Disconnection should be incumbent on both the DER provider and the DSP, not just the DSP.

Commented [A10]: Oncor emphasizes the importance of retaining this language because damage to equipment may allow access to energized electrical equipment, and failure of control devices or protection equipment could impact the reliability and continuity of service.

(i) a DER provider to submit a new interconnection application;

(ii) a new ~~impact~~ study to be performed;

(iii) the executed interconnection agreement to be amended, revised, and/or restated; or

(iv) additional testing in accordance with subsection (h) of this section.

Commented [A11]: For a particular DER provider, studies beyond just impact studies may need to be performed.

(C) **DER non-compliance.** If at any time a DER no longer meets the requirements listed in subsection (c) of this section, then a DSP must disconnect the DER. Upon notification from the DER provider that the DER has been restored to compliance with the technical and operational requirements of §25.212 of this title, in accordance with subsection (c) of this section, the DSP must have an inspector verify such compliance as quickly as is reasonably practicable.

Commented [A12]: Ideally, contemplated changes to the DER would be discussed with the DSP prior to repair or replacement. This remedy is necessary in the event those discussions do not occur.

(D) **System emergency causing an unscheduled outage.** A DSP may temporarily disconnect a DER without prior written notice in cases where continued interconnection may endanger persons or property. During an unscheduled outage of a DSP's distribution system, the DSP may temporarily disconnect a DER to make immediate repairs. As quickly as is reasonably practicable, the DSP must notify the DER provider of the unscheduled outage and reconnect the DER.

(E) **Scheduled outages for routine maintenance, repairs, and modifications.** A DSP may temporarily disconnect a DER from the DSP's distribution system for a scheduled outage, provided that the DSP issues notice in writing to the DER provider at least seven business days prior to such a disconnection. The DSP must reconnect the DER as quickly as is reasonably practicable following any such service interruption.

(F) **Unauthorized modifications.** A DSP may disconnect a DER from the DSP's distribution system upon discovery of an unauthorized modification that was not agreed upon in the interconnection agreement during the

interconnection process, and that was not previously authorized by the DSP in accordance with paragraph (h)~~(3)~~(1)(B) of this section. The DSP may reconnect the DER as stipulated by the executed interconnection agreement. Prior to reconnection and in accordance with subsection (f) of this section, a DSP may require:

(i) a DER provider to submit a new interconnection application;

(ii) ~~additional studies~~a new study to be performed;

(iii) the executed interconnection agreement to be amended, revised, and/or restated; or

(~~iii~~iv) additional testing in accordance with subsection (h) of this section.

(4) **Metering.** Metering must be consistent with Chapter 25, Subchapter F of this title (relating to Metering).

(5) **Tariff updates.** Not later than 30 calendar days after the effective date of this section, a DSP who is also a TDU must file a tariff amendment with the commission for approval to comply with this section. A DSP that is not also a TDU must amend its commission-approved tariffs, as appropriate, to comply with this section. A DSP that is not also a TDU and sells electricity must also include back-up, supplemental, and maintenance power services for DERs in its tariff.

(6) **New or amended interconnection agreements.** Newly executed or amendments to existing executed interconnection agreement that are completed 30 or more calendar days after the commission's approval of a DSP's compliance tariff, filed in accordance with paragraph (5) of this subsection, must meet the requirements of this subsection.

Commented [A13]: If a DER change impacted capacity or intended operation, then a full restudy may be required. Some instances may not require a full restudy but would require revisions to IA or verification testing. If changing inverter to new model with same capacity, certifications, and functionality, then updating IA may be acceptable. Changing a protective relay may only require relay testing to be completed.

Commented [A14]: Oncor revised this list so that it matches the list in section (d)(3)(B) above (as revised by Oncor).

(e) **Pre-screen study.** A DER provider may request a pre-screen study for one or more proposed sites for a DER prior to submitting an interconnection application to a DSP under subsection (f) of this section. The pre-screen study is optional, and DER providers may request an impact study without having completed a pre-screen study. If the DER provider requests a pre-screen study, then the interconnecting ~~A~~ DSP must complete the pre-screen study in accordance with good utility practice. A pre-screen does not represent a commitment to procure or utilize particular equipment, either by the DSP or the DER provider.

(1) The DER shall provide to the interconnecting DSP the following to initiate a pre-screen:

(A) intended operation such as a settlement-only generator or an independent system operator-dispatchable resource for energy and/or ancillary services, proposed in-service date, general fuel source, and type of generator equipment;

(B) GPS location of interconnection point on proposed site of DER;

(C) approximate kW size of generation exporting level; and

(D) approximate kW size of load or charging level, if energy storage is included.

(2~~1~~) The DSP is not required to guarantee the results reflected in the pre-screen study, and the DSP is not required to complete detailed engineering design or cost estimates similar to that of the impact study. Results from a pre-screen study for DER must, as applicable:

Commented [A15]: In-service date allows DSP to account for planned project completions. Fuel source and type of generator help determine general system impacts to potential limiting factors.

Commented [A16]: Oncor has received sites with a location inside of existing Oncor facilities that are not an accurate interconnection point.

Commented [A17]: Pre-screens are intended to provide site-specific information relevant to the DER size and operation. This information often becomes stale and / or invalidated upon the next customer load request or DER application. This is the same process Oncor uses to support our load customers.

(A) indicate general utility impacts of ~~whether~~ the requested operations, exporting level, and ~~as applicable~~ charging level~~, of the DER can be facilitated at the DSP's substation~~, given other known and approved interconnection applications ~~in place or under interconnection~~currently in the impact study phase~~, without requiring significant transmission utility system upgrades~~;

(B) identify potential limitations at the DSP's substation and possible options for the interconnection of the DER if the DER provider reduces the requested exporting and/or charging capacity; and

(C) list the additions or upgrades needed to accommodate interconnection of the DER at the DSP's substation, including, but not limited to, a new substation, an additional bay, or transformer replacement.

(~~2~~3) When conducting a pre-screen study, the DSP must account for ~~all~~only those DERs with completed and fully-funded interconnection applications in the interconnection process at the substation and those DERs with fully executed interconnection agreements at the substation.

(~~3~~4) Upon payment of the pre-screen study cost by the DER provider and the DER provider's completion of all documentation required by the DSP, the DSP must perform a pre-screen study. A pre-screen study is undertaken as of a stated date and a DSP must use best efforts to provide the results of a pre-screen study within twenty five (25) business days of the date the pre-screen study request is received by the DSP. Such time may be extended if a DER provider and its affiliates collectively request pre-screen studies for more than ten sites currently pending

with the DSP, or if the total number of pre-screen studies pending with the DSP exceeds ten sites. If a DSP cannot provide a pre-screen study within twenty five (25) business days, the DSP must notify the DER provider of the delay and provide an estimated completion date for the pre-screen study.

(45) A pre-screen study is not a substitute for an impact study, technical studies required by the DSP, or any reliability studies required by the independent system operator. A pre-screen study will not, on its own, reserve or hold capacity on the distribution system.

(f) **Interconnection Process.** A DSP must permit a DER provider to interconnect to the DSP's distribution system any DER that meets the requirements of § 25.212 of this title and has successfully completed the following paragraphs (1)-(3) of this subsection and any additional studies or testing required by the DSP and/or the independent system operator, including but not limited to steady state, stability, and dynamic studies; provided, however, that if, prior to the execution of an interconnection agreement as described in paragraph (3) below, the DER provider makes any significant modifications to its facilities to be interconnected, such modifications may necessitate the submission of a new interconnection agreement and the completion of a new impact study before an interconnection agreement may be executed.

(1) **Interconnection application.** To initiate the interconnection process, a DER provider must submit to the DSP a completed and fully-funded interconnection application and all supporting documentation necessary for a DSP to conduct an impact study as required by paragraph (2) of this section. A DSP must approve,

reject, or ~~deny~~suspend its review of the interconnection application and promptly notify the DER provider of the decision in writing.

Commented [A18]: If a DSP is not able to immediately approve or reject, due to other interconnection applications earlier in queue that need evaluation first, it may wish to temporarily suspend, pending review of the others. See (f)(1)(D) below.

(A) The DSP must promptly notify the DER provider of any deficiencies in the interconnection application or supporting documentation and provide a reasonable timeframe to cure the deficiencies.

(B) A DSP must reject an interconnection application if a DER provider submits a notice of termination to the DSP.

(C) A DSP may reject an interconnection application if:

(i) the DSP can demonstrate specific reliability or safety reasons indicating why the DER should not be interconnected at the requested site; or

(ii) the DER provider fails to timely provide a notice to proceed to the DSP under subparagraph (2)(D) of this subsection.

(D) A DSP may suspend its consideration of an interconnection application if one or more other interconnection projects has already been submitted to the DSP for consideration under this section for the same approximate location. Upon completing its review of all earlier submitted interconnection projects at the same approximate location, the DSP must resume its review of the interconnection application.

Commented [A19]: If multiple applications seek to interconnect in the same area, Oncor processes them in the order in which they were submitted. Oncor cannot always give an answer on the second or third application while it is still reviewing the first application at that same spot. Need to allow the DSP to put those subsequent applications "on hold" temporarily.

(2) **Impact Study.** After approval of a DER provider's interconnection application under paragraph (1) of this subsection, a DSP must complete an impact study of the DER detailed in the interconnection application in accordance with this paragraph. In performing an impact study, a DSP must review reasonable methods to safely

and reliably interconnect a DER with the distribution system which, for certain DERs, may includeing ~~an evaluation of switching service to a~~options other than the standard radial feed ~~if practicable and acceptable to the DER provider~~, as determined by the interconnecting DSP.

(A) Upon a determination by a DSP that an interconnection application is complete, and includes all necessary supporting information, the DSP must notify the DER provider in writing of the cost of the impact study including additional technical studies as required by the DSP. The DSP must proceed with the impact study upon the DSP's receipt of the study fee from the DER provider.

(B) Except for interconnection applications for which the DSP has suspended its consideration under subsection (f)(1)(D) of this section, ~~T~~the DSP must use good-faith efforts to complete the impact study and provide the study results to the DER provider within ~~ninety~~ sixty (~~9~~60) business days after the DSP's receipt of the complete application and study fee; provided, however, that for DERs that are intended to be dispatchable resources with the independent system operator, the DSP must use good-faith efforts to complete the impact study and provide the study results to the DER provider within ninety (90) business days after the DSP's receipt of the study fee.

(C) The results of an impact study must include:

(i) a list of ~~all~~ impact study assumptions~~, including the economic operating limits~~ of the DER and the physical operating capabilities of the DER if the DER provider has specified them;

Commented [A20]: Oncor is unsure of what this means. The default is a radial feed, except for interconnection in the downtown networks.

Commented [A21]: More complex, dynamic, interactive studies are required for dispatchable DERs, especially if participating in ancillary services like non-spin. Should either use 90 business days for all DERs or use two timelines: a shorter one for settlement only DERs, and a longer one for dispatchable DERs.

Commented [A22]: An exhaustive list of assumptions will be challenging to provide.

(ii) an explanation and description of any required facilities or upgrades needed to supply the DER at its requested service level;

(iii) an estimate of the itemized costs of any required facilities or upgrades needed to supply the DER which should contain, at a minimum, a description of and estimated costs for distribution system upgrades, a description of and estimated costs for substation upgrades, any applicable standard allowance for load-serving costs, and applicable fees and taxes, to the extent the DSP is able to determine this information for the particular DER resource;

(iv) the amount of such costs the DSP requires to be covered by a contribution in aid of construction (CIAC) or security: and

(v) a list of additional devices, operating schemes, or other specifications that, as determined by the DSP, may be required for interconnection of a DER described in an interconnection application.

(D) No later than twenty (20) business days following the DER provider's receipt of the impact study results, the DER provider must notify the DSP whether the DER provider plans to proceed with the interconnection process. ~~If the DSP determines that changes to the DER's in-service date, design configuration, equipment, operational requirements, or easement requirements would potentially change the results of the impact study, the DSP may require a new impact study to be performed.~~

Commented [A23]: It seems more logical to include this language in subpart (E), which already addresses the performance of new impact studies.

(E) The DSP may require a new impact study to be performed if, after beginning the initial impact study on the DER, there are any unexpected changes to the DER's in-service date, design configuration, equipment, operational requirements, or easement requirements that would potentially change the results of the initial impact study. The DSP may also require a new impact study to be performed if any of the following actions have not been taken within ~~seventy~~ forty (~~7~~40) business days following the DER provider's receipt of the impact study results.

(i) An interconnection agreement has not been executed in accordance with paragraph (3) of this subsection.

(ii) The DER provider has not provided the DSP a CIAC and, if applicable, any financial security, as required by paragraph (g)(3) of this subsection.

(iii) The DER must demonstrate it has secured all necessary authorization or ownership to build at the selected site.

(3) **Interconnection Agreement.** After a DSP completes an impact study for the DER, the DSP and the DER provider must execute an interconnection agreement prior to interconnection of the DER.

(A) Within ten (10) business days of the date the DER provider notifies the DSP of its intent to proceed with interconnection of the DER, the DSP must provide an interconnection agreement to the DER provider that includes the estimated in-service date. The in-service date may be contingent on the DER provider submitting evidence to the DSP of the executed easements

for construction of the DSPs interconnection facilities ~~and~~ no later than ~~thirty~~ ninety (~~3~~90) calendar days before the estimated construction commencement date of the DSP's interconnection facilities.

Commented [A24]: Redesigns may be necessary if easement changes are made by customer. Additional time is necessary to account for potential design changes/ tweaks as determined by the easement contracts.

(B) An executed interconnection agreement may be amended, revised, and/or restated by an amendment or addendum ~~upon mutual agreement of the DSP and DER provider~~ so long as the amendments do not conflict with a requirement of this section or §25.212 of this title. If the amended, revised, or restated interconnection agreement contains different terms than those provided in the standard form interconnection agreement published in subsection (m) of this section, then ~~T~~the DSP must file with the commission the amended executed interconnection agreement within thirty (30) calendar days of the execution of the amendments. A cover letter must be included summarizing the contents of the amendments.

(C) If a DSP and DER provider agree to different terms than ~~is~~those provided in the standard form interconnection agreement published in subsection (m) of this section, then the interconnection agreement that is to be executed may be modified to reflect these changed terms so long as the modifications do not conflict with this section or § 25.212 of this title.

(D) The DSP must file with the commission all new executed interconnection agreements that substantially differ from the interconnection agreement published in subsection (m) of this section within thirty (30) calendar days of their execution, including a cover letter identifying any modifications from the interconnection agreement published in subsection (m) of this

section. Portions of an executed interconnection agreement may be filed confidentially to protect competitively sensitive commercial or financial information.

(E) In addition to any termination rights contained in the interconnection agreement, ~~T~~the DSP may terminate an executed interconnection agreement if the DER provider is unable to complete its DER in-service and commissioning requirements within twelve months after the in-service date.

(g) **Responsibilities during and after interconnection.**

(1) **Communications.** A DER provider must provide the DSP with complete and detailed written information concerning the proposed DER during each stage of the interconnection process. A DER provider must provide updates to the DSP as quickly as possible, and no later than two (2) business days thereafter each time the DER provider becomes aware of a change to the expected timeline for interconnection that is expected to impact the in-service date under the interconnection agreement. Communications concerning the nature of a proposed DER must be consistent with §25.84 of this title (relating to Reporting of Affiliate Transactions for Electric Utilities), §25.272 of this title (relating to Code of Conduct for Electric Utilities and their Affiliates), and §25.273 of this title (relating to Contracts between Electric Utilities and their Competitive Affiliates).

(2) **Anticompetitive practices.** A DSP and its affiliates must not use knowledge of a proposed DER submitted to it for pre-screen study, impact study, or interconnection

to prepare competing proposals to the DER provider that offer either discounted rates in return for not installing the DER, or offer competing DERs.

(3) **Contribution in aid of construction.** A DSP must acquire and construct any facilities necessary to interconnect a DER in accordance with its commission-approved tariff and good utility practice.

(A) Notwithstanding any other law, a DSP may require a CIAC from a DER provider for the reasonably estimated costs that a DSP incurs to construct, install, or upgrade any distribution system or interconnection facilities that are necessary to operate the DER at its requested service level, including but not limited to any such transmission facilities and such facilities inside the DSP's substation, and for the costs of any acquisitions of the additional facilities ~~that would affect the tax liability of a DSP~~required by the DSP for safe and reliable interconnection of the DER. Such reasonably estimated costs are limited to those specified in an executed interconnection agreement and, if applicable, exceed the ~~allowable expenditure~~standard allowance amount that may be applicable only to load-serving costs as calculated in accordance with the DSP's commission-approved tariff provision on standard allowances, if any. The DSP must provide the DER provider an estimation of the itemized costs to be collected through the CIAC by general cost category, which should contain, at a minimum, a description of and estimated costs for distribution system upgrades, a description of and estimated costs for substation upgrades, any applicable standard allowance for load-serving costs, and applicable fees and taxes, to

the extent the DSP is able to determine this information for the particular DER resource. The DSP shall provide this estimation of the itemized costs consistent with its commission-approved tariff and the DSP's standard process for addressing other load-serving costs.

(B) Notwithstanding any other law, a DSP may require a DER provider to post a security for the estimated costs of planning, licensing, and constructing new or ~~updated~~ upgraded distribution or transmission facilities not covered by the CIAC.

(i) A DSP must return the security to a DER provider within 10 business days after (i) a DER provider notifies a DSP in writing of commencement of commercial operation and (ii) for a DER provider registered as a resource with the independent system operator, the independent system operator has verified that the DER provider has achieved commercial operation.

(ii) If a DER provider abandons a site and new distribution or transmission facilities are no longer required, a DSP may retain as much of the security as is required to recover the costs the DSP incurred in planning, licensing, and construction activities related to the planned new or upgraded distribution or transmission facilities.

(C) A DSP must commence engineering design and release of work orders for the procurement of the additional facilities that are required to enable the interconnection no later than 30 ~~calendar~~ business days after payment in full of the CIAC and, if applicable, any financial security.

(D) Within 180 calendar days of the date the DSP is notified that the DER is commencing commercial operations, a DSP must provide ~~invoices~~ a reconciliation of the total utility upgrade costs in comparison to the total payments made by the DER provider. A DSP must provide this reconciliation to the DER provider for the facilities the DSP procured and installed to enable the DER to interconnect to the distribution system. If the ~~invoiced~~ reconciled amounts are less than the total of the ~~allowable expenditure~~standard allowance and the CIAC paid by the DER provider, then the DSP must reimburse the DER provider all excess funds the DER provider paid the DSP. If the reconciled amounts are greater than the total of the standard allowance and the CIAC, then the DER provider must pay the DSP all excess funds the DSP paid for the facilities the DSP procured and installed to enable the DER to interconnect to the distribution system.

(4) ~~**Financial assurance for r**~~**Removal and disposal of DER.** Notwithstanding any other law, a DSP may require, through the interconnection agreement or other agreements, that the DER provider remove facilities and pay for the removal costs of DSP facilities once the DER is no longer intended to be operational at its sited location, or require additional financial assurance, in addition to the CIAC and security described under paragraph (3) of this subsection, from a DER provider for costs associated with removal and disposal of the DER and related equipment and facilities once the DER is no longer intended to be operational at its sited location. A DER provider may provide the financial assurance as an irrevocable stand-by letter of credit or a cash deposit to be held by the DSP in a segregated cash account.

Commented [A25]: Oncor's position is that this language in (4) is not needed for DSPs operating within ERCOT and can be removed from the rule. If, however, Commission Staff finds it necessary to include, then Oncor suggests that its applicability should be limited to municipally owned utilities and electric cooperatives, given that it doesn't appear to be applicable for the competitive areas.

(A) If the DER provider removes the DER and related equipment and facilities, then the DSP must return the financial assurance to the DER within 10 business days of the completion of the removal of the DER and related equipment and facilities.

(B) If the DER provider does not remove the DER and related equipment and facilities within 60 calendar days of the date the DER is no longer intended to be operational at its sited location or upon termination of operation of the facility as intended, then the DSP may use the financial assurance to cover the costs of removing and disposing of the DER and related equipment and facilities.

(C) The DSP in coordination with affected transmission service providers must determine an appropriate amount of financial assurance and provide the DER provider this amount with the results of the decommissioning impact study.

Commented [A26]: It seems that PUC Staff may be envisioning a determination done as part of de-commissioning studies as is done for generators connected to the transmission system.

(D) The DER provider must provide the DSP the required financial assurance prior to the DER commencing commercial operations.

(h) **Testing.** The DER provider must coordinate with the DSP to complete all ~~required~~ testing required by the DSP and the applicable independent system operator of all equipment related to interconnection and all required interoperability testing before the commencement of the in-service date of the DER specified in an executed interconnection agreement.

Commented [A27]: Testing usually has multiple phases. Examples include individual equipment commissioning, entire site or partial site interoperability testing, telemetry/ control testing, other ISO tests as required based on operation.

(1) The DER provider must provide notice to the DSP at least 15 calendar days before the initial energizing, ~~and~~ start-up testing, and any interoperability testing of the

DER. The DSP may observe the testing of any equipment and protective systems associated with the interconnection.

(A) Testing of protection systems must include procedures to functionally test all protective elements of the DER up to and including tripping of the DER at the point of interconnection. Testing must verify all protective set points and breaker trip timing. The DSP may observe the testing of the DER, including installed switchgear and protection systems.

(B) If modifications to a DER are deemed to be necessary by a DSP or DER provider after testing of the DER under this subparagraph, a DER provider must revise and re-submit an interconnection application to the DSP with information reflecting any necessary or foreseeably necessary modifications to the DER. A DSP may only deem a modification to be necessary if the safe and reliable operation of the DSP's distribution system may be impacted.

(2) A DSP may require additional testing of the DER on any modifications of the DER or protective functions, after the commencement of commercial operations.