ADMINISTRATIVE GUIDE

Application Process &
General Review Requirements

TUCSON ELECTRIC POWER COMPANY

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APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

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APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

INTRODUCTION

This Administrative Guide for Distributed Generation Facility applications in Tucson Electric Power's service territory is owned and maintained by TEP Energy Programs. All updates to this document will be announced and posted to https://www.tep.com/get-started-with-solar/#documents. Questions regarding this document and its processes should be directed to Energy Programs at renewables@tep.com.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

DEFINITIONS

AC Coupled: An energy storage system that is connected to an AC point of coupling with the service provider.

Application Does Not Meet Requirements: Generating Facility application does not meet one of the requirements as it relates to customer or high level system information provided during the Generating Facility Application process.

Application Process and General Requirements Guide: This document, also referred to as "The Guide," contains all application processes and general requirements for successful submission of Level 1 Super Fast Track Projects.

Application Submittal Photos: Photographs provided as part of the Generating Facility Application Review process:

- Revenue meter location
- Main service panel location
- Breakers inside of the main panel
- Proposed point of interconnection
- Proposed DG meter and AC disconnect equipment location

It is highly recommended that the photos listed above are submitted with the application for the proposed Generating Facility.

As Built: The documentation required for submission of the Notice of Installation Completion (NIC). An "As Built" is considered complete if it consists of:

- Final AHJ Documents
- One-Line (if applicable)
- Plot Plan
- Three-Line

It is highly recommended that final installation pictures as defined in this Guide are included in the As Built packet. Projects with approved variances also are required to submit photos as referenced in variance approval correspondence.

Approval for Parallel Operation: Notification given in a Permission to Operate letter that a Generating Facility has been granted permission to energize and operate in parallel with the utility.

Authority Having Jurisdiction: Governmental authority having jurisdiction to inspect and approve the installation of a Generating Facility within the territory that is served by the utility.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

BAT: Clearance provided by Authority Having Jurisdiction informing TEP that the AHJs final inspection is complete and passed and given approval to energize.

Customer: Person(s) who reside in TEP's service territory and have service with TEP. This term could also refer to a third party approved to provide information on customer's behalf.

DC Coupled: An energy storage system that is connected to the DC point of coupling of the Distributed Generation. There are many different ways to couple a system within the DC Coupled 1 and DC Coupled 2 scenarios. In general, a DC Coupled 1 system requires one DG disconnect and one DG meter, and DC Coupled 2 system requires two DG disconnects and two DG meters.

DGC: Final clearance sent to utility indicating permission to energize the Distributed Generation System and set DG Meter.

DGIR: This refers to the Distributed Generation Interconnection Rules approved by the Office of the Attorney General of Arizona in A.G. Rule No. AGR10-0004, the Final Rulemaking regarding the Interconnection of Distributed Generation Facilities Rules, A.A.C. R14-2-2601 through R-14-2-2628, effective February 25, 2020, and as adopted by the Arizona Corporation Commission in Docket No. RE-00000A-07-0609 on February 25, 2020. A complete copy of the Distributed Generation Interconnection Rules are located at https://docket.images.azcc.gov/0000201047.pdf.

DGL: This is clearance given by the Authority Having Jurisdiction to the utility to energize the service entrance after completion of a Line Side Tap or Main Breaker change out for the DG project.

Does Not Satisfy Requirements Notice: Notice sent to a customer that their application does not meet the requirements outlined in this Guide, the DGIR or our Service Requirements. Customer need to make the necessary adjustments to comply with the requirements and resubmit the application for secondary review.

Drawing Review Checklist: The three items that TEP requires to be shown on the customer-supplied drawings: one-line, plot plan and three-line.

Expansion: Application received for a project that adds capacity to an existing system by using other modules and/or new inverter. If a customer is entirely replacing their existing system with a new system, this is **not** considered an expansion, unless the new system is a like-for-like of the previously installed system.

Exporting System: Any type of Generating Facility that is designed to regularly back feed the Distribution System.

Final Field Tech Inspection: Required inspection by TEP field technician (typically from TEP Design Services) that completes a final inspection of projects needing a power kill completed by TEP as referenced in Electric Service Requirement SR-702. This inspection is completed after AHJ completes its inspection. Projects submitted to NIC that have not had a final field inspection will be placed in Notice of Installation Requires Corrections status.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Generating Facilities Requirements Review: First review of Generating Facility Application. During this review, the following is verified and or conducted:

- Property Owner
- Address
- High Level Equipment Review
- Customer and Generating Facility information as referenced on Customer supplied drawings

Generating Facility Design Does Not Satisfy Requirements: Designs submitted with the application do not satisfy the one or more of the requirements of Screens A, E or F or require corrections to comply.

Inadvertent Export: The unplanned, uncompensated transfer of electrical energy from a Generating Facility to the Distribution System across the point of interconnection.

Initial Supplemental Review: Additional review of a Generating Facility that has failed Screen A. This review is based on the most recent data from the aggregated circuit to which the applicant's photovoltaic (PV) system is connected. TEP uses the most recent Minimum Daytime Load data of the applicable subject distribution circuit to determine if there are any safety or reliability risks to TEP's electrical operations.

Installation Completion Pictures: Pictures of the final Generating Facility Installation that include:

- Overall equipment layout (including service entrance, DG equipment and labeling)
- Point of interconnection
- DG disconnect and DG meter (external and internal view)
- Facility map placard photos (if applicable and requested in writing) of the service entrance/revenue meter and utility disconnect switch, denoting each other's location

Interconnection Agreement: The Agreement signed by TEP and the customer that includes the terms, conditions and appendices governing the interconnection and parallel operation of the Generating Facility with TEP's electrical system.

Interconnection Manual: A technical manual developed by TEP that outlines the manner in which to work with the utility.

Interconnection Review (Drawing Review): A technical review of Generating Facility drawings, including one-line, plot plan and three-line drawings, customer-supplied inverter information and Screens A, E and F as defined in this Guide.

Installation Proposal Pictures: Customer-supplied pictures of the Generating Facility installation in its final completed state.

Keeping Existing System and Adding Another System- Keeping all of the existing modules and inverters, and adding both new modules and inverters. May also include adding an energy storage system.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Level 1 Super Fast Track Application Process: Series of reviews as approved by the DGIR to ensure that the Generating Facility meets all requirements in this Guide and the DGIR.

Map Placards: Additional communication required in the form of a placard for the following instances:

- If the revenue meter is not line of sight from the DG meter socket and utility disconnect switch
- If the DG meter socket and utility disconnect switch are greater than 10 feet from the revenue meter

Main Service Panel Catalog Number: SR-452 contains a list of approved manufacture's meter sockets and service equipment. Visit https://esr.tep.com/wp-content/uploads/SR-452.pdf

Major Modification: Modifications to the Generating Facility that do not meet and/or conform to the definition of Minor Modifications.

Method of Interconnection: The manner in which the generating facility is interconnected to TEP's grid.

Minor Modifications: Modifications to the Generating Facility that are requested by customer and approved by TEP pursuant to the Interconnection Agreement. Minor Modifications are defined further in this Guide. Visit https://www.tep.com/wp-content/uploads/Minor-Modifications.pdf.

New and Existing Equipment: All equipment on the three line should be listed as new or existing. TEP defines *new equipment* as anything being installed or replaced at the property. *Existing equipment* is defined as anything that is currently installed and remains at the property. TEP considers a service panel to be *new* if the service panel was installed after the DG application's approval date, regardless if it was installed by a third party.

Service entrances and breakers should be labeled as either new or existing on all submitted drawings. New all in ones, solar ready panels and revenue meter sockets should have catalog numbers listed as referenced in Service Requirement SR-452.

Non-Exporting System: A system in which there is no designed, regular export of power from the Generating Facility to the Distribution System.

Notice of Installation Completion (NIC): The method of informing TEP that installation of the Generating Facility is complete, including the final inspection by the AHJ, confirmation of project construction and required As Built.

Notice of Installation Completion Checklist: A checklist provided by TEP to assist installers in gathering final documents and taking the required actions before they submit their NIC.

Notice of Installation Completion: Confirmation of receipt of the NIC form from the customer and verification of all required final inspections of the As Built have been completed by TEP's Field Technician.

Permission to Operate (Approved for Parallel Operation): Written approval from TEP that a Generating Facility has been approved for parallel operation with our electrical system and may be energized and

begin operating. This is granted only after construction is completed, jurisdictional clearances are obtained, the facility passes all inspections and all DGIR and Service Requirements have been met.

Plot Plan: Diagram showing Generating Facility equipment, including individual components and their locations, the Service Entrance Section and utility meter, locations of inverter/inverters, the utility's disconnection switch and any lock-boxes. Building structure location as well as any wall, fences and gates must be included to ensure access to equipment or noted if access is not available without a customer appointment. Please include a north-facing compass reference point within the plot plan.

Power Kill: A TEP journeyman electrician will disconnect power to a customer's revenue meter so that service entrance work may be completed. After the installer has completed their service work and governmental clearance is received by TEP, our electrician will return to reconnect power to the revenue meter. For projects that are expansions, the power kill process differs slightly. DG meters are disconnected/removed during the power kill process and will be reset once the project is complete following inspection by the AHJ.

Power Kill Photos: Photos of the electrical work completed by TEP for the power kill, which are required prior to inspection by the AHJ and receipt of DGL. This is a requirement for all line-side or load-side taps. As Built that does not contain these pictures will be returned to installer.

Pre-Application Report: Report run at the customer's or installer's request to verify that proposed Level 1 Super Fast Track projects will pass Screens A, E and F. Reports are valid for 30 days from date the results are provided.

Premise Under Construction: A new premise is being built, and does not have TEP electric service at the location at the time the application was submitted. New service must be established prior to a DG production meter being set.

Programmable Inverters: Inverters that use feedback to prevent or limit the export of solar energy to TEP's grid. When a transformer or feeder line is saturated with PV systems, the inverter must be programmed to prevent energy output to ensure the system is non-exporting.

Relocate System to Another Premise: Relocating a DG system from one address to another.

Replacing Existing System with New System: The complete removal of existing inverters and modules and replacement with new inverters and modules.

Request for Work Order Creation: The notification by TEP's Energy Programs Department that a power kill is required. Notification is triggered when a Generating Facility passes General Requirements and Interconnection Reviews. Customer coordinates with TEP's Design Services to schedule all electrical work.

Retrofit: Installation of an energy storage system for an existing PV system that includes modifications to the existing kW AC and kW DC sizes without any modules or inverters being added or exchanged.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Satisfies All Requirements Notice: Letter notifying the customer that their proposed Generating Facility meets general requirements and Interconnection Review will proceed as defined in the Guide.

Screen A Review: Review of the total aggregated existing solar capacity of the TEP distribution circuit to which the applicant's installation location is connected.

Screen E Review: Review of all of the DG projects currently installed or in process that will be connected to the proposed project's associated transformer. If the total existing and potential load exceeds 75% of the transformer capacity, the proposed project will fail the screen.

Screen F Review: Review and confirmation that the project's inverter operates at 240V. If it does not, the project will fail the screen.

Self-Install: Generating Facility that is installed by the customer, not by a third party installer. All electrical work completed by a non-third party installer must be completed by a licensed electrician.

Status Guide: A guide that defines the various statuses of DG projects as noted in PowerClerk, TEP's data management system for interconnection projects.

Super-Fast Track NIC Submittal Checklist: Checklist of required items or actions to prepare installers for submitting their Notice of Installation Completion.

Three-Line: Diagram that shows detailed phase wiring of all electrical equipment as required in the Electrical One-Line Diagram to include all neutral, equipment ground and grounding electrode equipment conductors and connections.

Virtual Inspection: An inspection conducted by a TEP Energy Programs Specialists online and virtually rather than in-person at the request of the customer or installer.

Work Order: A record of scheduled electrical work to be performed by TEP that provides a method of tracking work completed.

LEVEL 1 SUPER FAST-TRACK APPLICATION REQUIREMENTS

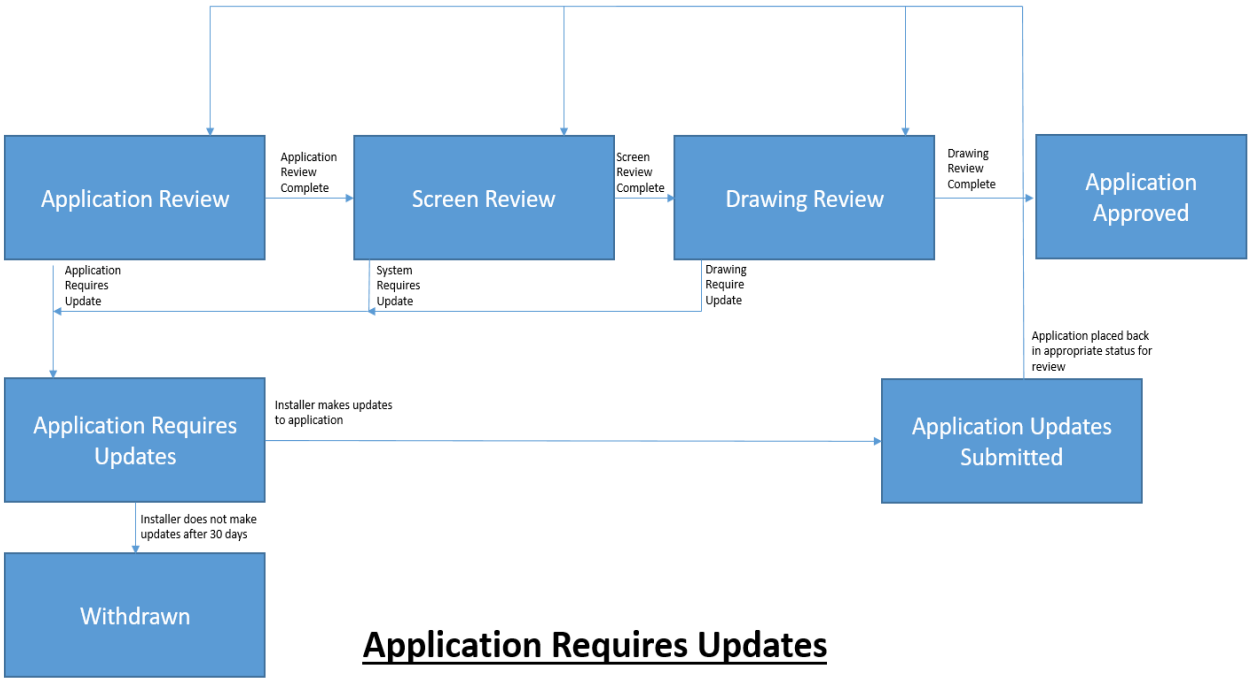
Generating Facilities with a maximum capacity 20kW or less with an inverter and that use equipment conforming to the standards in the Interconnection Manual and comply with Screens A, E and F (as defined in the DGIR) qualify for the Level 1 Super Fast Track application process. The customer is required to complete/provide:

- An online application
- Site plan
- Three-line wiring diagram

General Application Requirements Review

TEP will review information in the project application to ensure that general facility requirements are met. Projects that satisfy these requirements proceed to Interconnection Review, and the customer will receive a Notification of Meets/Satisfies Requirements letter.

Customers with projects that do not meet the requirements may amend and submit an updated project application within 30 calendar days. Customers who do not submit project updates within this time period will have their projects withdrawn.



Application Requires Updates

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Interconnection Review

TEP will review customer-supplied drawings and inverter data against aforementioned screens and our Electric Service Requirements. Projects that meet all interconnection requirements and have passed the Generating Facility Interconnection Review are deemed approved for interconnection. At this time, a permit may be secured for the construction of a Generating Facility project.

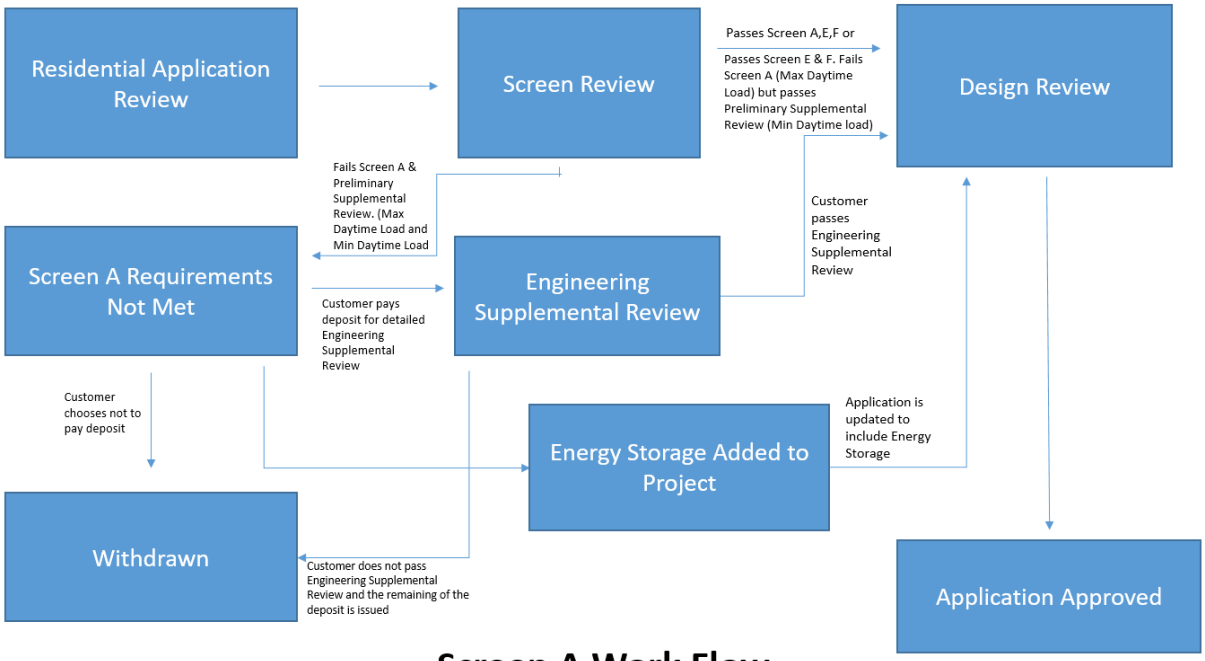
TEP then prepares the Interconnection Agreement (IA) and all exhibits relating to interconnection for signature by TEP and the customer. A signed IA must be completed and returned by the customer in order for the project to proceed to meter set.

TEP's reviews of the Generating Facility Drawing/Diagram and project approval does not relieve the customer or installer of their responsibility to ensure their project complies with all applicable electric codes, laws, regulations and utility requirements applicable to its installation and operation.

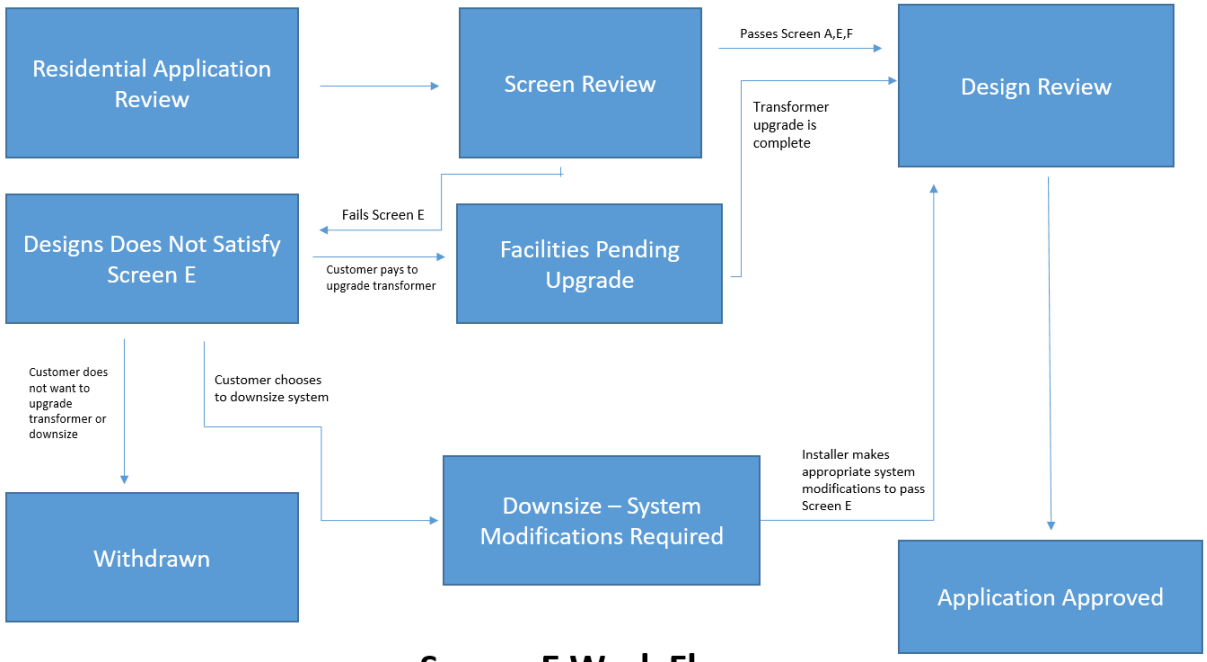
If a project fails to meet general facility requirements or one or more of the Screen Requirements for Level 1 Super Fast Track, the customer will be notified and their application will be placed in a Does Not Satisfy Requirements status as described in this Guide. The customer has three options:

- Modify the project design to comply with the requirements for Level 1 Super Fast Track
- Request that TEP perform a Supplemental Review described in Section 8.7 or
- Withdraw the application. Generating Facility Applications placed in an Application Does Not Satisfy Requirements or Corrections Needed status will be withdrawn if a modified proposal is not resubmitted to TEP within 30 calendar days.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS



Screen A Work Flow



Screen E Work Flow

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Minor Modifications

The application approval process is intended to ensure that customers design, install and operate a Generating Facility that strictly complies the requirements of the Interconnection Agreement (Appendix B) provided at time of Generating Facility approval. Post-approval changes to projects that meet the definition of Minor Modifications listed below are allowed. TEP reserves the right to update this definition as it deems appropriate. Such changes are allowed only from the time of the application review to the submittal of Notice of Installation Completion. There are four categories of Minor Modifications:

1. Application Information

Property Owner/Customer Information

- Changes to property owner/customer as long as the property address remains the same
- Update to e-mail or phone number

Installer Information

- Sub-contractor contact information changes
- Update to the installer's e-mail or phone number

System Information

- Lease or purchase
- System cost

2. Generating Facility

Modules

- Change in module quantity or make
- Module layout

Inverter(s)

- kW AC system size decrease
- Inverter make and/or model as long as the kW AC system size is not increased
- Inverter location

3. Electrical Service Panel/Service Entrance

- Catalog number of like-for-like main service panels, as long as the equipment catalog number is listed in the Approved Metering and Service Equipment Service Requirement (SR-452)
- Like-for-like service panel change outs, as long as the method of interconnection remains the same, and as long as the equipment catalog number is listed in the Approved Metering and Service Equipment Service Requirement (SR-452)

4. Miscellaneous

- Any modification required by the utility.

If the project Modification is minor and meets the definitions as described above, the project update may be provided in the Notice of Installation Completion (NIC). TEP will transmit an updated Exhibit B prior to or when Permission to Operate or Approval for Parallel Operation is granted.

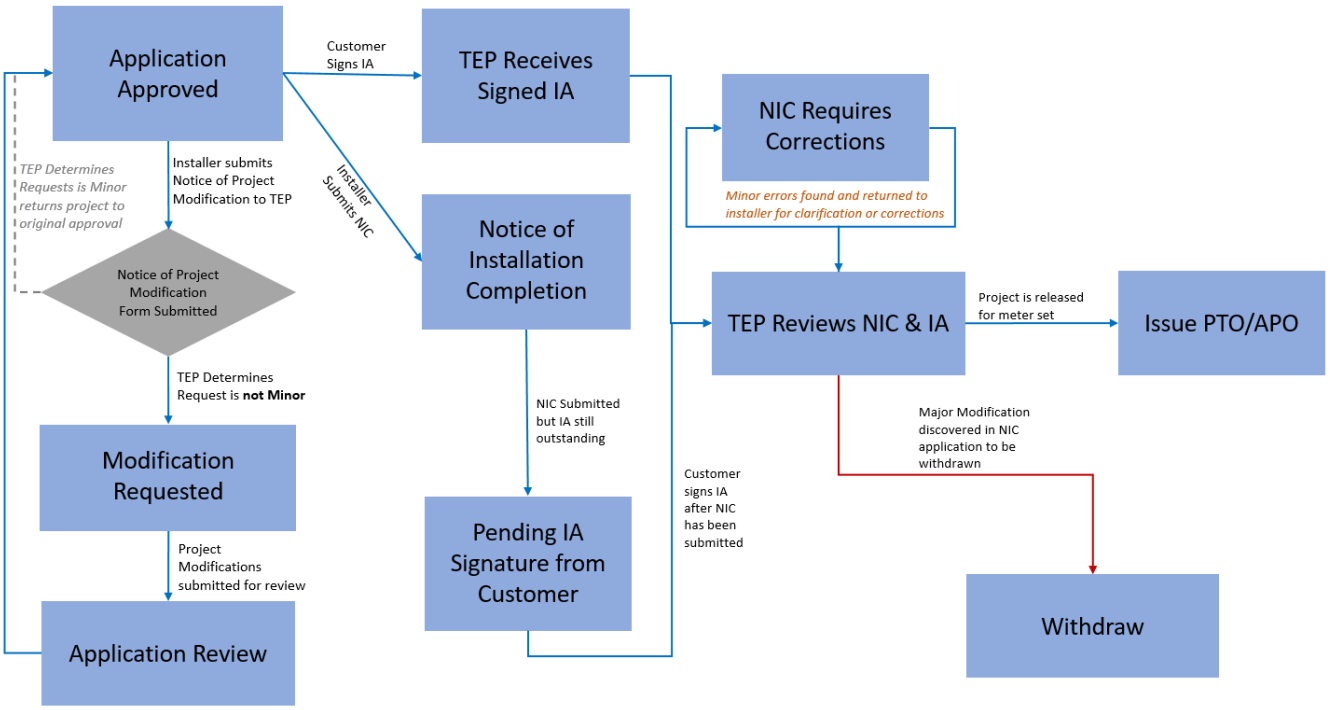
Major Modification (Material Modification)

TEP considers any change made outside of what is defined as a Minor Modification to be a Major Modification, also known as a Material Modification. If a major modification occurs, TEP may withdraw the application or require the project be modified to comply with requirements.

Modification Requested

The Notice of Project Modification form should be used as shown in workflow provided here to inform TEP that a major change has been made to the project or to request TEP's review/determination of a requested change. If TEP determines the modification is major, the project will be reviewed and placed in the status of Level 1 Modification Requested in order to allow installers to make the requested updates to the project and return to the workflow for TEP's review. Reviews are not expedited by using the Notice of Project Modification form.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS



Modification Workflow

90-Day Extension Requests

The 90-Day Extension Request Form may be utilized to request a one-time, 90-day extension. The use of this form will automatically extend the stated to build timeframe.

NOTICE OF INSTALLATION COMPLETION

a. Upon completion of the project, the customer must submit a Notice of Installation Completion (NIC) form.

b. The customer must provide the following in addition to their NIC form:

- Signed IA
- DGC Clearance
- NIC Submittal Checklist

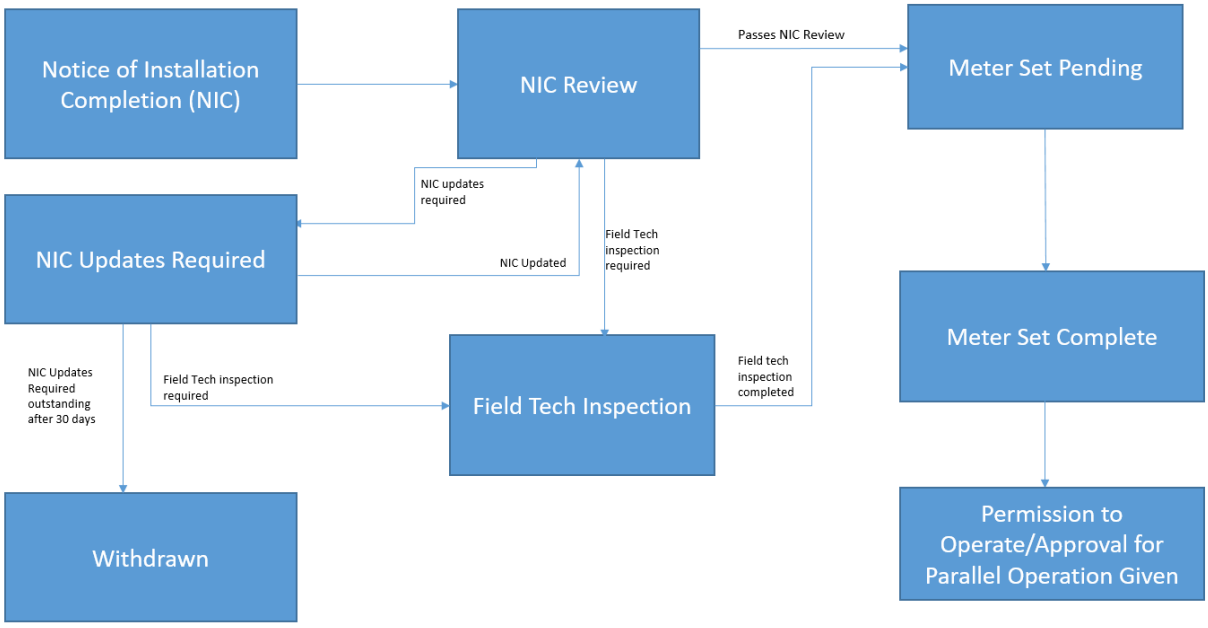
c. If the Notice of Installation Completion fails to meet one or more requirements, the customer will be notified. Outstanding issues must be addressed within 30 calendar days or the project will be withdrawn. Generating Facility applications that submit the NIC with a Major Modification as defined in this Guide will be withdrawn and subject to application resubmittal and rescreening.

d. Prior to or directly after setting the DG meter and replacing the revenue meter with a Bi-Directional Meter, TEP may inspect the project to verify compliance with interconnection requirements. TEP's site inspection is in addition to the inspection performed by the Authority Having Jurisdiction. Following TEP's inspection, the customer may not remove, alter or otherwise modify or change the equipment specifications, including without limitation, the plans, control and protective devices or settings and the Generating Facility system configuration. If TEP finds any items that do not meet requirements, the customer will be notified and given the opportunity to make the necessary corrections within 30 calendar days or project will be withdrawn. If the project is withdrawn, the disconnect shall be locked in a visible open position by a standard utility padlock, pending resubmittal and re-approval of the application.

e. After the meter set, TEP reserves the right to perform commissioning tests on the Generating Facility and associated Interconnection Facilities. Once the project passes the required commissioning tests, the customer will be issued a Permission to Operate (PTO) indicating that Generating Facility has been granted Approval for Parallel Operation (APO) of their system. Should the system fail any aspect of the commissioning tests, the customer will be given the opportunity to remedy the failure. Projects will be withdrawn and subject to resubmittal if the updates are not completed in 30 calendar days. If the project is withdrawn, the disconnect switch shall be locked in a visible open position by a standard utility padlock, pending re-submittal/re-approval.

f. Customer shall not commence interconnected operation of the Generating Facility with the TEP electrical distribution system before receiving PTO/APO from TEP. In some circumstances, TEP will allow the customer to temporarily interconnect a Generating Facility in order to perform pre-commissioning checks and tests. The customer shall notify and receive permission from TEP before doing so. If granted permission for temporary interconnection, customer assumes all liability for any damage or hazardous conditions caused by their Generating Facility.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

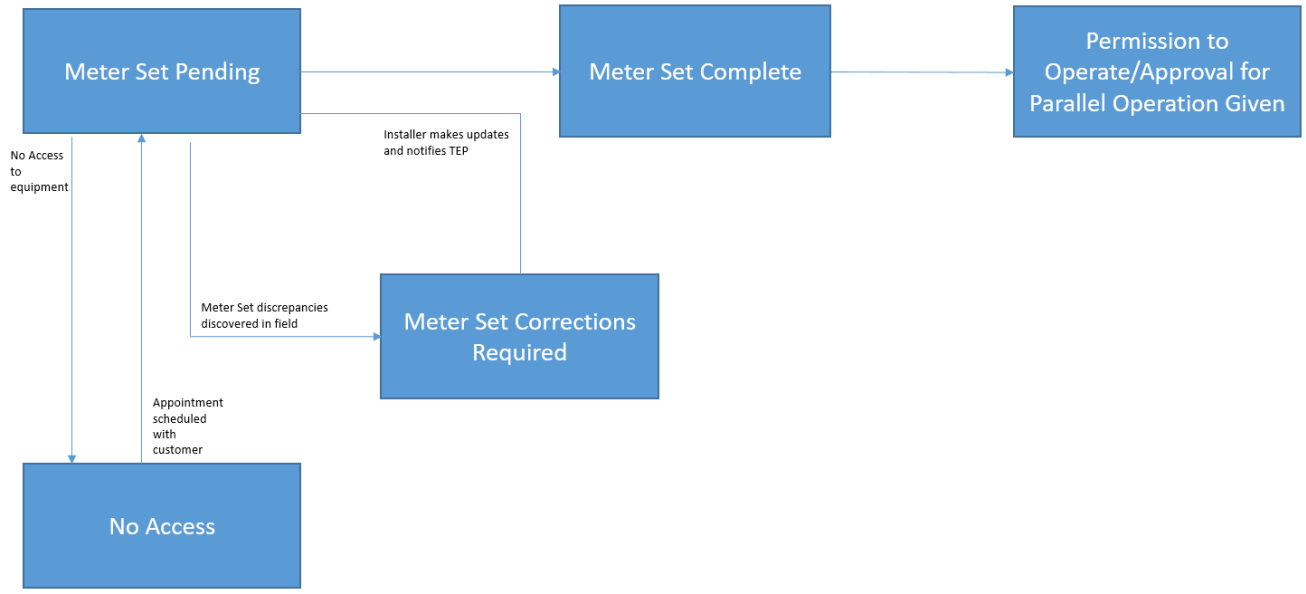


Notice of Installation Completion

METER SET PENDING

Projects that pass the Notice of Installation Completion Review and any or all inspections as required by TEP may proceed to meter set. Should the system fail any aspect of meter set as attempted by TEP, the customer will be given the opportunity to remedy the failure. Projects will be withdrawn and subject to resubmittal if updates are not completed in 30 calendar days. Meter sets that cannot be completed due to lack of access on the property may be given a second attempt at meter set scheduled through the TEP Metering Department.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS



Meter Set Pending

PERMISSION TO OPERATE (Parallel Operation)

Projects are approved for Parallel Operation/Permission to Operate after the TEP Metering Department has completed the meter set/exchange. TEP will provide written approval informing the customer that their system is ready to be energized and begin parallel operation with TEP's electrical grid.

ADDITIONS TO EXISTING SYSTEMS

Customers with Grandfathered Net Energy Metered Projects (As of 11-2-2020)

TEP's grandfathered Net Energy Metering (NEM) Policy does allow for additions to existing systems, as long as certain conditions are met as described below. The 20-year NEM grandfathered term will **not** reset; the grandfathered term for the entire system, (existing + expansion) will be based on the date of *original* interconnection of the existing system.

The following conditions apply:

- Application must be submitted and approved;
- The addition must not take the total system production to more than 125% of annual customer load;

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

- The addition must adhere to all current requirements – TEP's Electrical Service Requirements (SRs) and the Distributed Generation Interconnection Rules (DGIRs);
- Screen A as referenced in the DGIRs (A.A.C. R14-2-2615 (A)) will be applied as noted below:
  - Additions up to 10 kW, Screen A *will not* apply
  - Additions between 10 kW and 20 kW, Screen A *will* apply
- The proposed project must pass Screen E as referenced in the DGIRS (A.A.C. R14-2-2615 (E));
- The addition to a grandfathered system must **not** trigger a need for utility distribution upgrades.

The customer will be advised if there is a need for utility distribution upgrades. If any are required and should the customer elect to proceed, the system additions will void the grandfathered NEM status of a system. If the grandfathered NEM status is voided, the entire system – existing and addition – will be subject to the current rates and policies that are in effect:

- Residential and Small General Service customers will be subject to TEP Rider 14 (RCP rate)
- The Medium General Service Transition rate is frozen. If the Medium General Service Transition customer elects to proceed, the customer will lose the Transition rate and will be subject to current applicable rates.

However, Medium General Service and Large General Service customers remain eligible for NEM under **TEP Rider 4.**

Customers with Projects Submitted After October 1, 2018

Residential and Small General Service customers that are adding to projects originally submitted *after* October 1, 2018, will remain on Rider 14. As stated in Rider 14, TEP considers a material increase in capacity to be an increase of 10% or 1 kW, whichever is greater. Projects submitted after October 1, 2018, will also be subject to Screen E review. The customer will be advised of the need for distribution upgrades, if any, and should the customer elect to proceed, the entire system will result in a reset of the RCP rate in effect at the time of application for the expansion/addition.

For additions in TEP's service territory, it is important to note the following:

- All installed equipment, existing and new, should be listed on PowerClerk Forms and project drawings.
- Any additional wiring or electrical work needed to add capacity to an existing system may be completed after review and approval.
- Production from both the existing system and new system will be metered by one DG production meter. TEP does NOT allow multiple production metering. Both systems must be combined to be metered by a single utility DG production meter.
- Clearances are required.
- A DG application is required for like-for-like replacements.

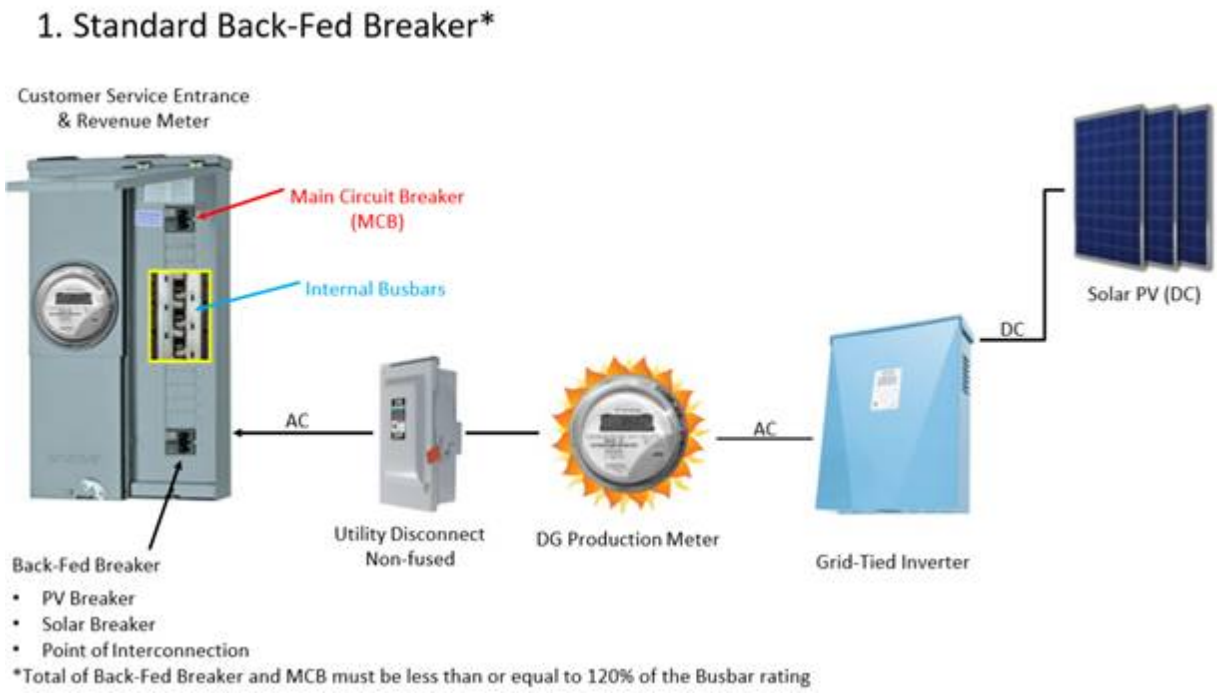
- Projects that require existing DG production meters to be pulled by TEP to complete the existing system modifications are re-set at a later date after the DG Clearance has been received and the NIC review.
- SR-710 provides more details on the addition of energy storage.

METHOD OF INTERCONNECTIONS - DEFINITIONS

The below is a listing of method of interconnections is representative of what is most commonly seen in TEP's service territory.

Load Side Interconnection: Interconnection of the customer generation output at a point on the customer-side of a main service disconnect.

- **Standard Backfed Breaker**
    - A back-fed circuit breaker in the service panel positioned at the opposite end from the main circuit breaker.



- **Standard Backfed Breaker w/ Main Breaker Derate**
    - The main breaker amperage is reduced to allow larger capacity for the backfed circuit breaker.
    - The backfed circuit breaker in the service panel positioned at the opposite end from the main circuit breaker.

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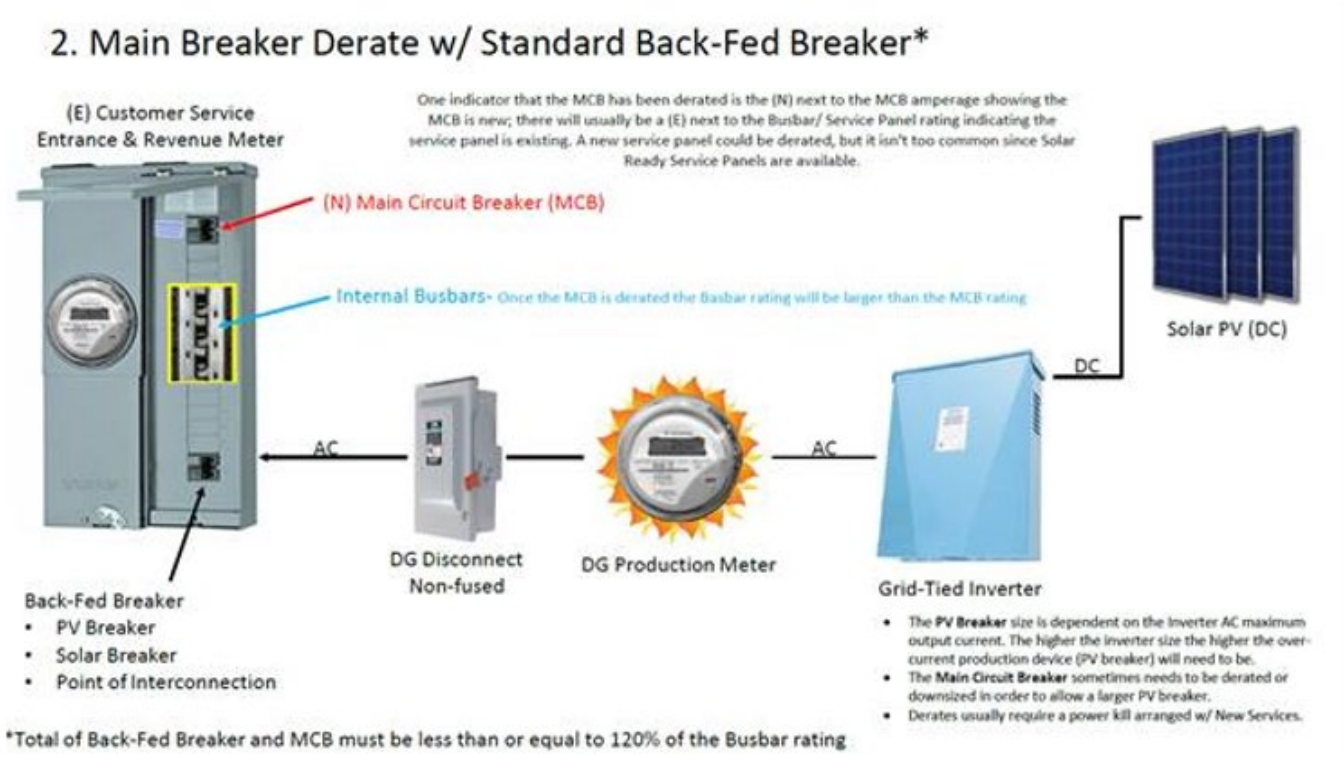
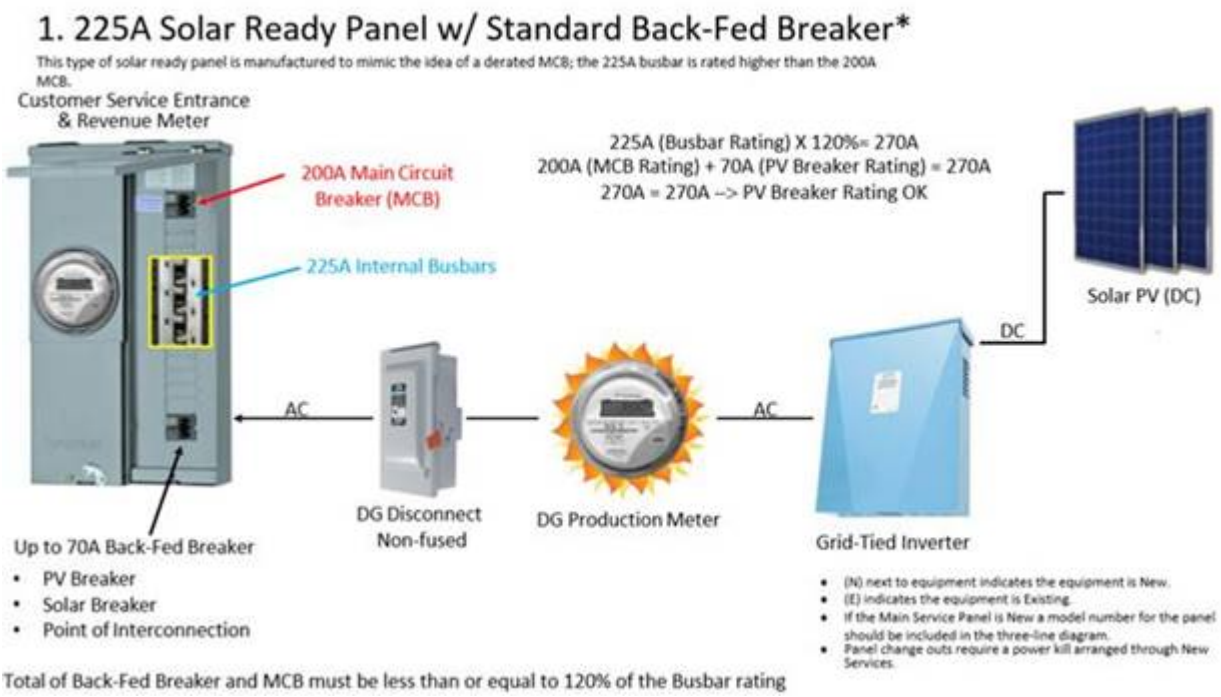


Solar Ready Panels

Solar ready panels eliminate the need to derate the main circuit breaker.

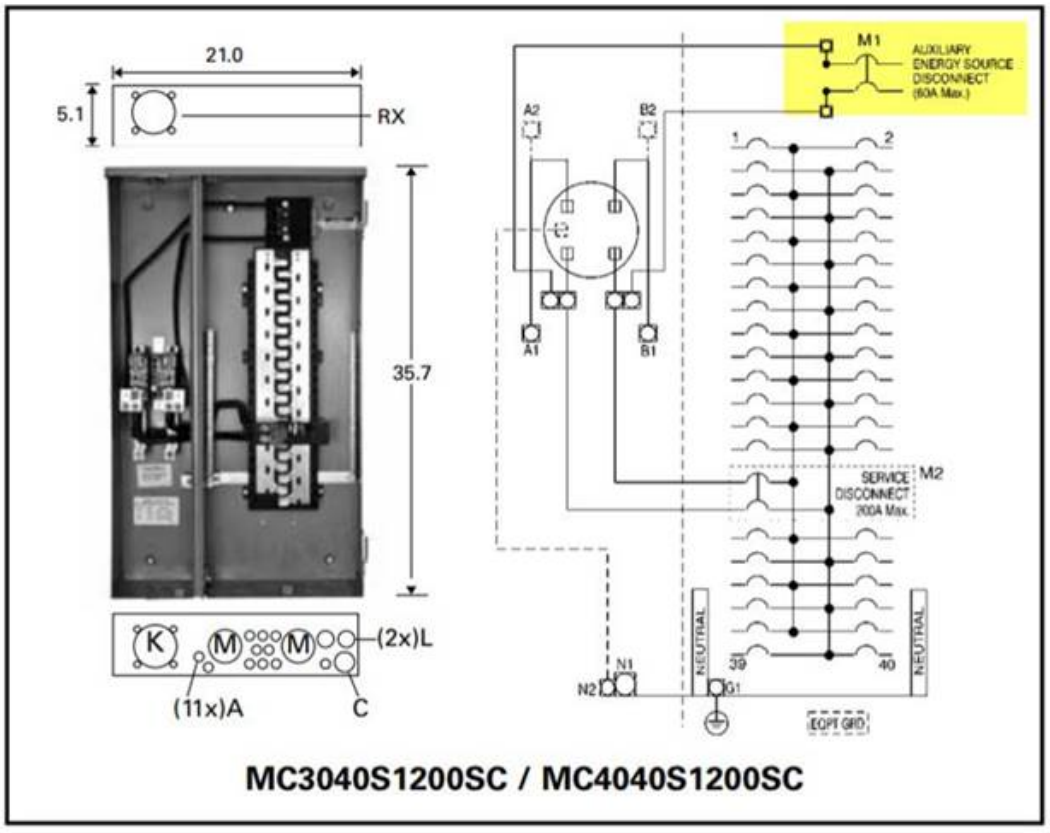
- **225A Solar Ready Panel**
    - The service panel has a 225A busbar rating and a 200A main circuit breaker rating.
    - The busbar is rated higher than the main circuit breaker to allow for a larger back-fed circuit breaker.
    - A back-fed circuit breaker in the service panel positioned at the opposite end from the main circuit breaker.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

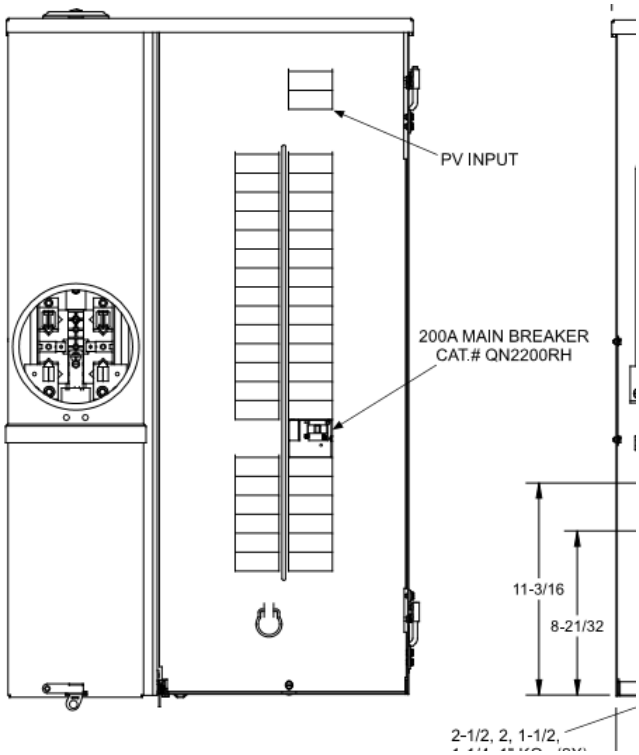


- **200A Solar Ready Panel w/ an Aux PV Breaker**
  - The service panel has a 200A busbar rating, and a 200A main circuit breaker rating.
  - Similar to a “built in line side tap” the aux PV breaker is separated from the 200A busbar, and routes the production to the line side of the service disconnect.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS



200A Solar Ready Panel w/ an Aux PV Breaker



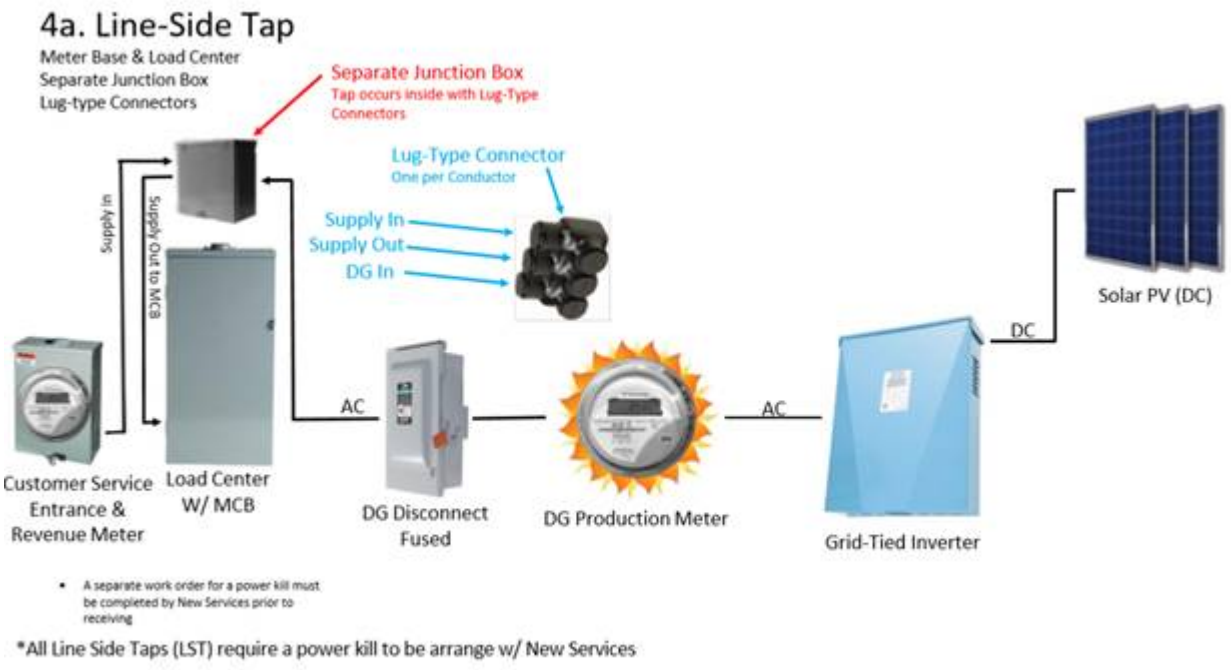
APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Line Side (Supply Side) Interconnection: Interconnection of the customer generation output between the Service Provider revenue meter and the customer main service disconnect(s).

- A power kill required
- Any line side interconnection shall be made without modifications to any factory installed and/or factory listed equipment or components.
- Line side taps are not allowed in the customer's service panel; line side taps are not permitted if the customer has an all in one service panel.
- The *fused* utility disconnect switch must have the required neutral ground bonding.

Line Side Tap in Junction Box

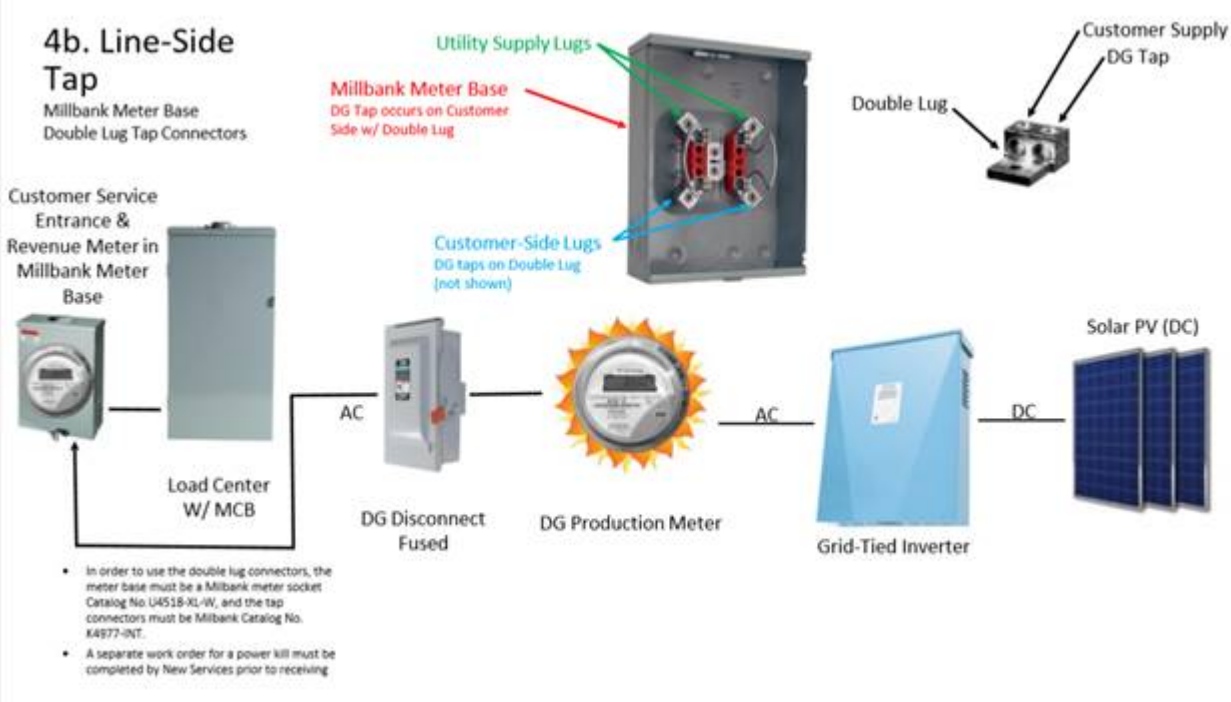
- Lug type connectors are used to tap into to the service entrance conductors in a separate junction box.



Line Side Tap in the Milbank Meter Base

- Milbank double lug tap connectors are used inside the Milbank revenue meter base enclosure.
- The revenue meter socket must be Milbank, Catalog number: U4518-XL-W.
- The tap connectors must be Milbank, Catalog number: K4977-INT.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS



REQUESTING POWER KILLS FROM DESIGN SERVICES

TEP Energy Programs serves as the main point of contact on Level 1 projects interconnecting in our service territory. Electrical work shall be requested during the Level 1 Super Fast Track Interconnection Application submittal process in PowerClerk.

As part of the review, approval and work order creation process, preliminary drawings must be supplied to TEP personnel, including Design Services. This enhanced process allows for both the approval of a Level 1 Super Fast Track project and the request for the creation of a work order simultaneously, *eliminating* the need to submit a Residential/Commercial Contraction Electric Service Application to Design Services to request a power kill. Scheduling of the power kill will be handled by Design Services.

Important information to know in working with Energy Programs and Design Services:

- Requests for a power kill that are not made through the Level 1 Super Fast Track application process during the time of approval should be done by using the Request for Work Order Creation form available in PowerClerk.
- If a permit number is NOT provided on the Interconnection Application in PowerClerk and is required by the AHJ, the power kill request will be placed on hold. Design Services will not initiate the scheduling of a power kill appointment **until** a permit is secured.
- If a permit is obtained after the Interconnection Application has been approved by TEP, contract Design Services directly to provide the permit number and begin the scheduling process.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

- Meeting with a field tech prior to scheduling a power kill is required for line-side taps, like-for-like change-outs and service increases.
- Projects with power kills may require multiple clearances depending on the type of work and the AHJ, in addition to the DGC.
- If a DG installation includes an energy storage interconnection, a BAT (Battery) Clearance also is required.
- If an existing service entrance has added only a battery storage interconnection, a BAT clearance is required.
- All completed distributed generation projects require a final DGC, which is sent by the AHJ to TEP each day.
- It is the responsibility of the installer to ensure that all clearances are provided to TEP.
- Any type of modification to an existing system that does **not** involve changing or swapping of the inverters, modules or system capacity including energy storage must first go through Design Services.
    - Design Services will reach out to Energy Programs in order for approval for the DG meter to be pulled.
- If an existing DG meter needs to be pulled to expand an existing project, the DG meter pull may be required on the Interconnection Application.
- The AHJ will require a new clearance for any modifications made after to a DG system after an original DGC has been obtained in order to have the DG meter set or reset.
    - If the AHJ does not require a new DG clearance, they will need to send an e-mail to schedcoord@tep.com or call our clearance line at 520-918-8300 – Option 5 – to advise a waiving of the requirement.
- A permit number is required by TEP in order to schedule most types of power kills. If a main breaker derate is being performed, depending on the jurisdiction, a permit may or may not be required.
- TEP reserves the right not to re-energize any service where:
    - The work performed does not match the scope of work outlined during the scheduling of the power kill.
    - An unsafe or hazardous condition is identified by the responding TEP representative.
- A power kill may be cancelled if:
    - The described scope of work by requestor does not match the on-site verification.
    - TEP resources are responding to power restoration efforts.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

Reason for Power Kill	Permit Number Required Prior to Scheduling?	Field Tech Inspection Pre- and Post-Inspection?
Line Side Tap	Yes	Yes
Like for Like Service Panel Change Outs and Service Increases	Yes	Yes
Main Breaker Derates	Depends on AHJ	No
Existing DG Meter Pull (no power Kill) or any modifications made after an orginal DG clearance has been provided	No, but a DG Clearance will be needed prior to the DG meter being reconnected	No

INSPECTIONS

In-Person

TEP personnel are available to conduct site inspections as requested. All site inspections are scheduled with the customer to include the installer, if necessary. These projects require inspections: Installations with energy storage, non-exporting systems, self-installs, new installation companies and projects with line-side taps.

Virtual

TEP at its discretion may conduct virtual inspections of both in-process and completed projects as requested by the customer and/or the installer on a first-come, first-served basis. Completed projects will be inspected after receipt of the final inspection completed by the Authority Having Jurisdiction. Virtual inspections are scheduled with the **installer**, and **either the installer or their electrician must be present** at the time of inspection.

All Non-Exporting projects **must** have a final field inspection. Installers must be present during this inspection. The following will be verified for all Non-Exporting Systems:

- Site map matches installation site
- Energy storage (if applicable)
- Three-line drawing matches installation
- Inverter size, programmed to non-export and the system is not exporting
- Method of interconnection
- Proper wiring and location of DG meter
- Proper wiring and location of DG disconnect, including verification of neutral: ground bonding for line-side taps
- Proper conductor paths

DRAWING REVIEW CHECKLIST

Project Number: _____ Date: _____

Revenue Meter Number: _____ TEP Service Address_____

High Level System/Installation Information

System Size Criteria

Please enter the System Total kW DC = _____kW AC = _____

☐YES ☐NO: Have load calculations been run to determine the existing service panel ampacity is sufficient for proposed solar project?

Existing Service Entrance Information

☐Overhead ☐Underground: Existing service type

Please state existing service/bus bar amperage: _____A

Please state proposed service/bus bar amperage: _____A

Please state existing MCB amperage: _____A

Please state proposed MCB amperage: _____A

☐YES ☐NO: Does the existing Revenue Meter and Service Entrance currently comply with current applicable codes and as well as all of TEP's Electrical Service Requirements, including SR-304, SR-405, SR-452?

☐YES ☐NO: Will the Service Entrance/Service Panel be replaced?

If YES:

☐YES ☐NO: Has TEP verified the conductor size is sufficient for the proposed service/busbar amperage?

Three Line Diagram – PV System

Diagram Review

☐YES ☐NO: Does the diagram omit any copyrighted, proprietary, or confidential language?

☐YES ☐NO: Does the diagram show an install address that matches application?

☐YES ☐NO: Is the following SES and Utility equipment, new (N) and existing (E), displayed and labeled:

Revenue Meter & Service Entrance

Utility PV Production Meter Socket

Utility PV Disconnect Switch

☐YES ☐NO: Is the following DG equipment, new and existing, displayed and labeled:

Inverter(s)

Photovoltaic Modules

Sub-panels (if applicable)

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

- Junction Boxes and Gutters associated with DG interconnection or Main Service (if applicable)
- Additional Disconnect Switches associated with DG interconnection or Main Service (if applicable)
- Energy Storage Systems (if applicable)

☐YES ☐NO: Do notes match up to equipment and make sense?

Service Entrance Section (SES) Information

☐YES ☐NO: Is new (N) and/or existing (E) equipment clearly identified?

☐YES ☐NO: Is the Revenue Meter badge number listed?

☐YES ☐NO: Is the SES amperage, voltage, and phase shown?

☐YES ☐NO: Is the Main Circuit Breaker (MCB) amperage shown?

☐YES ☐NO ☐N/A: Is the make, model, and catalog number for the following Service Entrance/Service Panel equipment listed?

- (N) Revenue Meter Socket
- (N) All in One
- (N) OR (E) Solar Ready Service Panel listed on the three line?
- (N) OR (E) Revenue Meter Socket for Line Side Taps (LST) (must adhere to SR-702's LST Requirements)
- Any lugs or adapters used for LST (must adhere to SR-702's LST Requirements)

☐YES ☐NO: Is the Service Entrance busing is drawn and labeled to accurately reflect product specifications (Solar Ready Panel, Multiple Main Breakers, etc.)

☐YES ☐NO: Does the Method of Interconnection (MOI) match application?

Standard Backfed Breaker

☐YES ☐NO ☐N/A: Is the PV (Back-fed) Breaker amperage shown?

Please state the proposed PV (Back-fed) Breaker amperage: _____A

☐YES ☐NO ☐N/A: Is PV breaker on opposite end of bus bar from Main Breaker?

☐YES ☐NO ☐N/A: Is PV breaker within 120% bus bar/MSP limits?

☐YES ☐NO ☐N/A: Is MCB de-rated?

Are all conductors are drawn and labeled?

Does the neutral conductor run from the Point of Interconnection to the neutral termination bus inside the Utility PV Production Meter Socket, at minimum, per TEP's Electrical Service Requirement SR-702?

☐YES ☐NO ☐N/A: If the system is an expansion or addition to an existing system, is the location of the connection point for the existing system shown?

Utility PV Disconnect Switch information

☐YES ☐NO: Are new and existing equipment clearly identified?

☐YES ☐NO: Are the make and model displayed?

☐YES ☐NO: Is the amperage, voltage, and phase displayed?

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

☐YES ☐NO: Is the location between the Revenue Meter and the Utility PV Production Meter Socket?

☐YES ☐NO: Is the displayed wiring consistent with SR-702 wiring schematics?

Line Side Taps

☐YES ☐NO ☐N/A: Is the utility disconnect switch fused and is the fuse amperage listed?

☐YES ☐NO ☐N/A: Is a neutral-ground bond shown in the fused disconnect?

Utility PV Production Meter Socket Information

☐YES ☐NO: Is new and existing equipment clearly identified?

☐YES ☐NO: Are the make and model displayed?

☐YES ☐NO: Is the meter socket catalog number listed in TEP's Electrical Service Requirement SR-452?

☐YES ☐NO: Are the amperage, voltage, and phase displayed?

☐YES ☐NO ☐N/A: Does the phasing match?

☐YES ☐NO: Is the displayed wiring consistent with TEP's Electrical Service Requirement SR-702 wiring schematics?

☐YES ☐NO: Are the Meter Socket and all related metering equipment and conduits properly grounded?

Inverter(s) Information

☐YES ☐NO: Are new and existing inverters clearly identified?

☐YES ☐NO: Are the number of inverters shown?

☐YES ☐NO: Is the rating, make, and model shown?

☐YES ☐NO: Is the total AC kW shown?

☐YES ☐NO: Is an EV Charger option installed? Note: These are currently not allowed.

☐YES ☐NO: Does the number of inverters, rating, make, model, and total AC kW match the application?

Photovoltaic Module Information

☐YES ☐NO: Are new and existing modules clearly identified?

☐YES ☐NO: Are the number of modules shown?

☐YES ☐NO: Is the rating, make, and model shown?

☐YES ☐NO: Is the total DC kW shown?

☐YES ☐NO: Does the number of modules, rating, make, model, and total DC kW match the application?

Site Plan Drawing Review

☐YES ☐NO: Does the diagram omit any copyrighted, proprietary, or confidential language?

☐YES ☐NO: Does the diagram show an install address that matches application?

☐YES ☐NO: Is the street clearly labeled and shown?

☐YES ☐NO: Is the driveway clearly labeled and shown?

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

☐YES ☐NO: Is the site plan drawn to proportion?

☐YES ☐NO: Is an elevation plan and/or photos provided?

☐YES ☐NO: Are the following SES and Utility equipment displayed and labeled?

- Revenue Meter & Service Entrance
- Utility PV Production Meter Socket
- Utility PV Disconnect Switch
- Additional Disconnect Switches associated with the Main Service (if applicable)

☐YES ☐NO: Are the following DG equipment displayed and labeled?

- Inverter(s)
- Photovoltaic Modules
- Sub-panels
- Junction Boxes and Gutters associated with DG interconnection or Main Service (if applicable)
- Additional Disconnect Switches associated with DG interconnection or Main Service (if applicable)
- Energy Storage Systems (if applicable)

☐YES ☐NO ☐N/A: Are the following permanent structures clearly labeled, if in proximity to utility and PV system equipment?

- Gas meters
- Ground AC Units
- Carports
- Porches
- Breezeways
- Patios
- Doors
- Windows
- Stairways
- Ramps
- Any other structures

☐YES ☐NO: Are the following items clearly labeled?

- Walls
- Gates
- Fences
- Property lines
- Any other items that would create obstructions on the property

If NO,

☐YES ☐NO: Does the drawing note no fences, gates, or obstructions?

Service Entrance Section (SES) Information:

☐YES ☐NO: Is the existing Revenue Meter and Service Entrance is in accordance with all of TEP's Electrical Service Requirements, including SR-304, SR-405, SR-452?

☐YES ☐NO: Will the Revenue Meter and Service Entrance location be in an acceptable area, as specified in both SR-304 and SR-405?

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

☐YES ☐NO: Will the Revenue Meter and Service Entrance meet minimum and maximum height requirements based off the proposed location, as specified in SR-405?

☐YES ☐NO: Does the existing Revenue Meter and Service Entrance meet the appropriate workspace, as specified in SR-405?

Utility PV Disconnect Switch information:

☐YES ☐NO: Is the proposed equipment location in accordance with all of TEP's Electrical Service Requirements, including SR-304, SR-405, SR-702?

☐YES ☐NO: Is the proposed equipment location in an appropriate area, as specified in both SR-304 and SR-405?

☐YES ☐NO: Is the proposed equipment location within 10 feet of the Revenue Meter, as specified in SR-702?

☐YES ☐NO: Will the equipment meet minimum and maximum height requirements based off the proposed location, as specified in SR-405?

☐YES ☐NO: Will the equipment have the appropriate workspace, as specified in SR-405?

☐YES ☐NO: Is the slop angle (or rise and run) identified for the rooftop that will hold array?

Utility PV Production Meter Socket Information:

☐YES ☐NO: Is the proposed equipment location in accordance with all of TEP's Electrical Service Requirements, including SR-304, SR-405, SR-452, SR-702?

☐YES ☐NO: Is the proposed equipment location in an appropriate area, as specified in both SR-304 and SR-405?

☐YES ☐NO: Is the proposed equipment location within 10 feet of the Revenue Meter (SR-702)?

☐YES ☐NO: Will the equipment meet minimum and maximum height requirements based off the proposed location, as specified in SR-405?

☐YES ☐NO: Will the equipment have the appropriate workspace, as specified in SR-405?

Labels:

☐YES ☐NO: Are TEP SR-702/SR-710 required labels found?

☐YES ☐NO: Does the service entrance have the required permanent identification, listing the complete street address, per SR-405?

☐YES ☐NO ☐N/A: Are facility map placards shown, if needed?

Access to Equipment:

☐YES ☐NO: Does TEP have 24 hour unrestricted access to TEP required Utility Disconnect Switch(s) and Utility Production Meter(s)? If no, please describe below.

APPLICATION PROCESS & GENERAL REVIEW REQUIREMENTS

NOTES TO UTILITY

NIC SUBMITTAL CHECKLIST

(Ctrl)

Project Number: _____ **Date:** _____

Revenue Meter Number: _____

As Built/ NIC Requirements

a) ☐YES ☐NO: Does the As Built Packet include the final AHJ Clearance documents?
b) ☐YES ☐NO: Does the As Built Packet include the final site plan, one-line and three line diagrams?
c) ☐YES ☐NO: Do the final diagrams match the diagrams submitted w/ the Application?
d) ☐YES ☐NO: Installer has informed and received approval for modifications to system installation?
e) ☐YES ☐NO: Has the project passed the final AHJ inspection?
f) ☐YES ☐NO: Does the project meet all applicable TEP Service Requirements?
g) ☐YES ☐NO ☐N/A: Does the As Built Packet include required photos?
h) ☐YES ☐NO: Has all service entrance work, which required a power kill, been completed, if applicable?
i) ☐YES ☐NO ☐N/A: Has the service entrance work passed Design's final field inspection? (only required for line-side taps, increases and change outs)
j) ☐YES ☐NO ☐N/A: If an existing solar customer, was the existing DG meter socket pulled?

COMMENTS