

2023 Installer Meeting

Welcome!

Welcome! The webinar will start at 2 p.m.

- **All attendees will be muted to reduce audio distractions, but we want to hear from you!**
 - **Please use the chat feature to submit any questions**
 - **Questions will be answered at the end of the presentation**
- **Look for a response through e-mail if we don't have the opportunity to respond today**





2023 Solar Installer Meeting

Sustainable, Reliable, Affordable Energy for the Future

August 17, 2023

Agenda

- Team Introductions
 - Technical Services Team
 - Program Coordinator Team
- Safety Moment
- RCP Rate Change
- End of Year Meter Sets
- Administrative Requirements
- Energy Storage Education



SAFETY MOMENT

EXTREME HEAT: Staying Safe in Record High Temperatures

As of Aug. 08, Pima County recorded *64 heat-related deaths year-to-date in 2023.

This number already exceeds the total count, of 58, for all of 2022.

Temps in Tucson commonly reach 100+ degrees from May to September.

Monsoons typically run from July to September and relative humidity will vary between 30 and 60 percent.

High temperature combined with high humidity can increase risk of heat illness.

*according to the Pima County Office of the Medical Examiner

Ways to Protect Yourself and Others

Ease into Work. Nearly 3 out of 4 fatalities from heat illness happen during the first week of work.



✓ **New and returning workers** need to build tolerance to heat (acclimatize) and take frequent breaks.

✓ **Follow the 20% Rule.** On the first day, work no more than 20% of the shift's duration at full intensity in the heat. Increase the duration of time at full intensity by no more than 20% a day until workers are used to working in the heat.



Drink Cool Water

Drink cool water even if you aren't thirsty — at least 1 cup every 20 minutes.



Take Rest Breaks

Take enough time to recover from heat given the temperature, humidity, and conditions.



Find Shade or a Cool Area

Take breaks in a designated shady or cool location.



Dress for the Heat

Wear a hat and light-colored, loose-fitting, and breathable clothing if possible.



Watch Out for Each Other

Monitor yourself and others for signs of heat illness.



If Wearing a Face Covering

Change your face covering if it gets wet or soiled. Verbally check on others frequently.

First Aid for Heat Illness

The following are signs of a medical emergency!



- Abnormal thinking or behavior
- Slurred speech
- Seizures
- Loss of consciousness

1

» **CALL 911 IMMEDIATELY**

2

» **COOL THE WORKER RIGHT AWAY WITH WATER OR ICE**

3

» **STAY WITH THE WORKER UNTIL HELP ARRIVES**



SAFETY MOMENT: If in Doubt, Call for Help!

FIRST WARNING WEATHER HEAT DANGERS

The infographic features a central figure of a person split vertically. The left side is yellow and represents Heat Exhaustion, while the right side is red and represents Heat Stroke. Arrows point from various symptoms to the corresponding side of the figure.

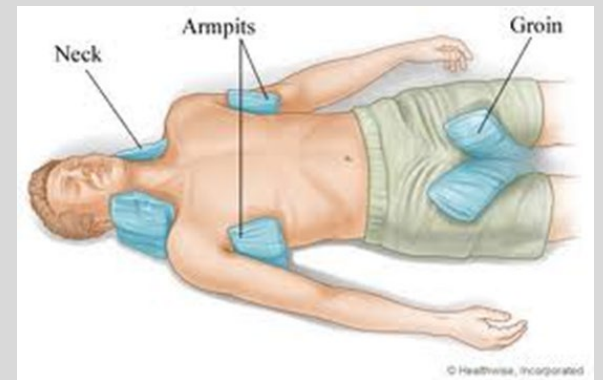
Heat Exhaustion (Left Side)	Heat Stroke (Right Side)
FAINT OR DIZZY	THROBBING HEADACHE
EXCESSIVE SWEATING	NO SWEATING
COOL, PALE, CLAMMY SKIN	RED, HOT, DRY SKIN
RAPID, WEAK PULSE	RAPID, STRONG PULSE
MUSCLE CRAMPS	MAY LOSE CONSCIOUSNESS
NAUSEA / VOMITING	

HEAT EXHAUSTION
A/C AND WATER

HEAT STROKE
CALL 9-1-1



If you believe a person is suffering from heat stroke call 911 immediately and help cool the person until help can arrive:



RCP RATE CHANGE

- Project must have PowerClerk timestamp prior to October 1, 2023
- Submissions must be advanced to System Specifications Submittal
- Submissions received on or after October 1 will receive the new RCP rate

View/Edit: TEPDG-57605

Go To Admin

Go to TEPDG-

Go



Current Status

Status marked as System Specifications Submittal on 9/30/2023 at 7:24 PM

Project Owner: Sam Molina, Jr (TEP Program Administrator)

Created on 6/7/2023 at 5:35 AM (62 days ago)
Last Updated on 8/8/2023 at 5:06 PM (6 seconds ago)

Project Summary

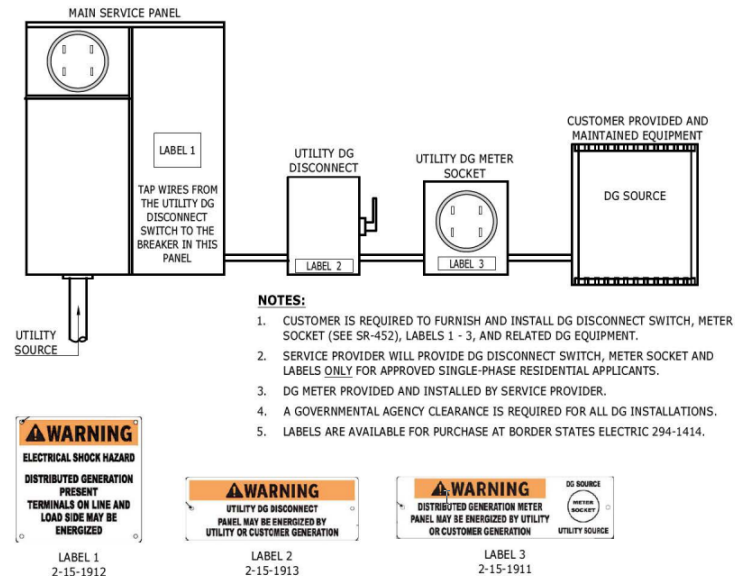
Last Name SolarGuy	Address 1234 W SOLAR WAY	Account Number 123654789	Technology PV + Energy Storage
Application kW AC 9.6	Application kW DC 7.14	Installed kW AC None	Installed kW DC None
Application & RCP Date 9/30/2023	Submitted to TEP Date None	Approval & IA Sent Date 6/7/2023	Meter Set Date None
Installation Type New System Installation	Method of Interconnection Standard Backfed Breaker	Power Kill None	WO Number None



END OF YEAR METER SETS

- **Meter Set Assurance Date: 10-17-2023**
- **Complete criteria is posted on website**
- **Labeling must adhere to standards outlined in SR-702, SR-703 and/or SR-710**

- Submit an approved application.
- Submit a complete and accurate Notice of Installation Completion (NIC) form.
- Adhere to all TEP Electric Service Requirements standards (702, 703, 710 etc.). Photos of equipment layout and label placement will assist in expediting review.
- Complete all project inspections required by TEP and the Authority Having Jurisdiction.
- Verify that all required clearances, including a final Distributed Generation Clearance (DGC) from the AHJ, have been submitted to TEP's New Service Department.
- Ensure that the customer has returned a signed Interconnection Agreement and any amendments, if applicable.



Let's Get that Meter Set

- ✓ **DGC Clearance transmitted to TEP**
- ✓ **MPU/LST - Design Inspection**
- ✓ **ALL Mandatory Labels**
- ✓ **IA Signed by Customer**



PERMIT REQUIREMENT

- Permit number is required to advance from Proof of Project Advancement Status
- Permits are required to consult with Design
- NIC cannot be submitted without prior receipt of a permit number

Available Forms

Form Name	Form Status
LVL 1 - 1st 90 Day Extension Request	Begin New Form Became available on 6/9/2023 at 11:31 AM
LVL 1 - Project Modification Request Form	Begin New Form Became available on 6/9/2023 at 11:31 AM
LVL 1 - Proof of Project Advancement	Begin New Form Became available on 6/9/2023 at 11:31 AM

Power Kill: Yes
Power Kill: No

Project Summary

Last Name SolarGuy	Address 1234 W SOLAR WAY	Account Number 123654789	Technology PV + Energy Storage
Application kW AC 9.6	Application kW DC 7.14	Installed kW AC None	Installed kW DC None
Application & RCP Date 9/30/2023	Submitted to TEP Date None	Approval & IA Sent Date 6/7/2023	Meter Set Date None
Installation Type New System Installation	Method of Interconnection Line Side Tap	Power Kill Yes	WO Number T123456

Permit Number required for BOTH

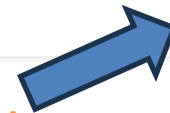
WORK ORDER CREATION

- Assigned Work Order Number will be available in PowerClerk
- Contact may be made with Design after Work Order number is available in PowerClerk

Show Editor ⓘ

Preview for View/Edit Project Page			
Last Name None	Address None	Account Number None	Technology None
Application kW AC None	Application kW DC None	Installed kW AC None	Installed kW DC None
Application & RCP Date None	Submitted to TEP Date None	Approval & IA Sent Date None	Meter Set Date None
Installation Type None	Method of Interconnection None	Power Kill None	WO Number None

- ✓ Work Order Number will populate within five (5) business days or sooner after submitting Proof of Project Advancement Form



PROJECT MODIFICATION

Project Modification Form is available for approved projects both at the **Proof of Project Advancement and System Installation statuses**

- Project modification form is now available at the following statuses: **Proof of Project Advancement and System Installation statuses**
- Detailed descriptions are required for review purposes – drawings and corresponding questions must match the modification
- Updates to projects should happen between **Application Approved and submission of Notice of Installation of Completion**

Available Forms	
Form Name	Form Status
LVL 1 - Notice of Installation Completion (NIC)	<input type="button" value="Continue"/> <input type="button" value="View"/> In Progress
LVL 1 - 1st 90 Day Extension Request	<input type="button" value="Begin"/> New Form Became available on 6/12/2023 at 2:05 PM
LVL 1 - Project Modification Request Form	<input type="button" value="Begin"/> New Form Became available on 6/12/2023 at 2:05 PM



MODIFICATION REQUEST

Please ensure your modification request description below encompasses all modifications made to the application. If not, please update your description below.

Proposed Modification - Please provide a detailed description of what will be modified *

Pre-Approval: Send Request to Renewables (TEP)

Post Approval: Modification Form within PowerClerk (Installer)



CHECKING E-SIGNATURE STATUS

- Customer Signature Status
- TEP's Countersignature Date
- Signature Requirement

Created Timestamp	Envelope Name	Signature Type	Status Timestamp	Status
> 6/19/2023 3:32:08 PM	TEP INTERCONNECTION AGREEMENT - Single Signee	eSign	6/19/2023 3:32:14 PM	Sent

Signature from our Customer is REQUIRED prior to submitting NIC Form

Created Timestamp	Envelope Name	Signature Type	Status Timestamp	Status
> 6/19/2023 3:32:08 PM	TEP INTERCONNECTION AGREEMENT - Single Signee	eSign	6/19/2023 3:32:14 PM	Sent

Status

✓ Sent: 6/19/2023 3:32:14 PM

Items

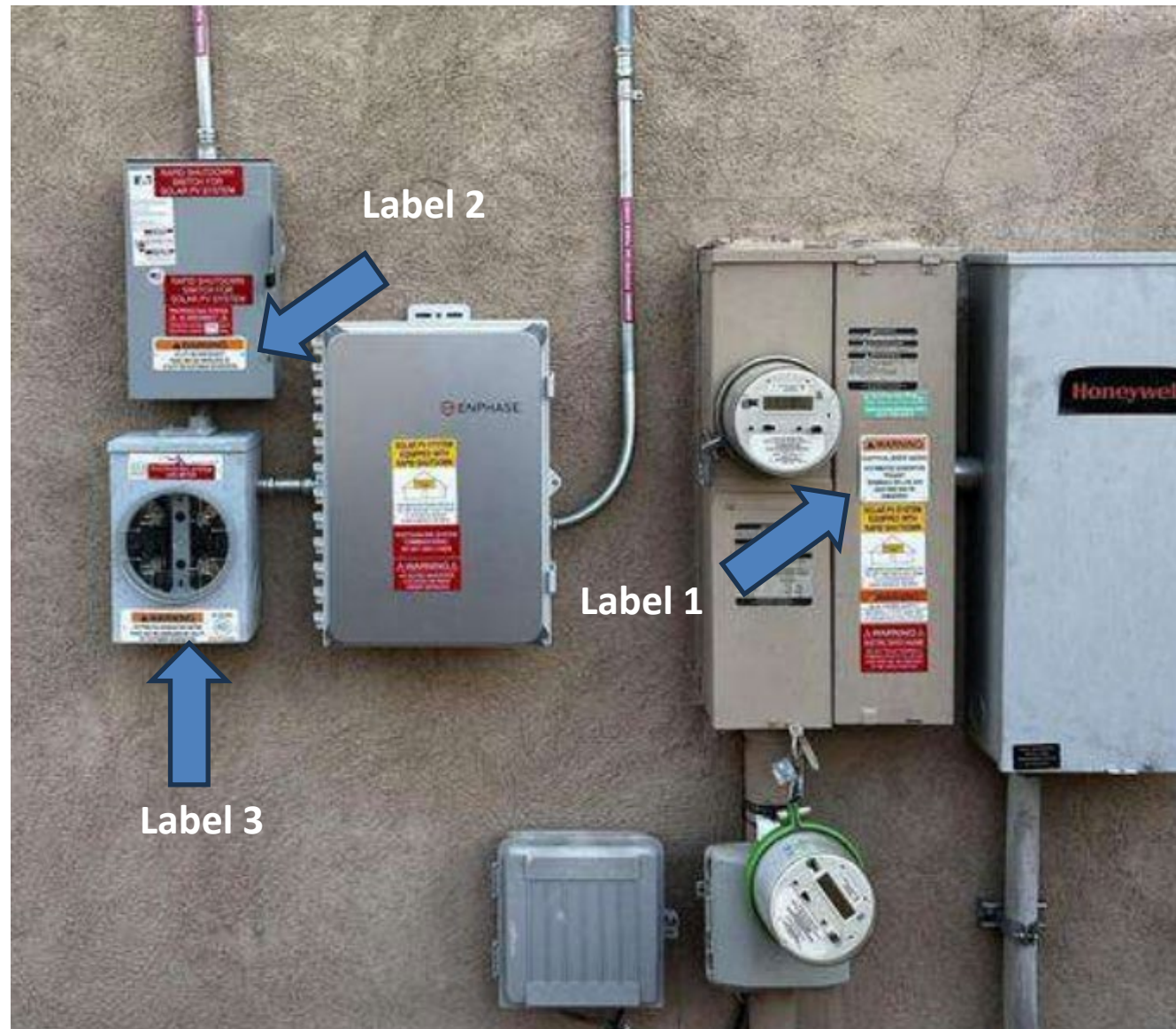
- TEP RESIDENTIAL EXPORTING INTERCONNECTION AGREEMENT V1
- TEP RESIDENTIAL EXPORTING INTERCONNECTION AGREEMENT V1.pdf

Recipients

- ConsumerFormSignee
- ✓ Completed: 7/18/2023 11:06:11 AM
- TEPIASignee
- Blanka Anderson | Renewables@tep.com
- ✓ Sent: 7/18/2023 11:06:12 AM
- IASignee1
- ✓ Completed: 7/18/2023 11:06:11 AM

EXPANSIONS

- Will the DG Meter be pulled?
- On the jobsite, where should the pulled meter remain?
- What should happen to our meter?
- Do we need a clearance?



- ❖ **LABEL TIP:** If there are multiple disconnects, please install warning Label 2 on the DG disconnect. To avoid confusion, refrain from installing multiple labels.



Plans

**Plan requirements
Site / 1-line / 3-line**

**Plan approval at
Drawing Review Stage**

**Installations are built
per the plan**

**As-Built plans are to
show minor revisions to
installation**

**Major Revisions to
installation**



TEP INSPECTIONS

Label Placards

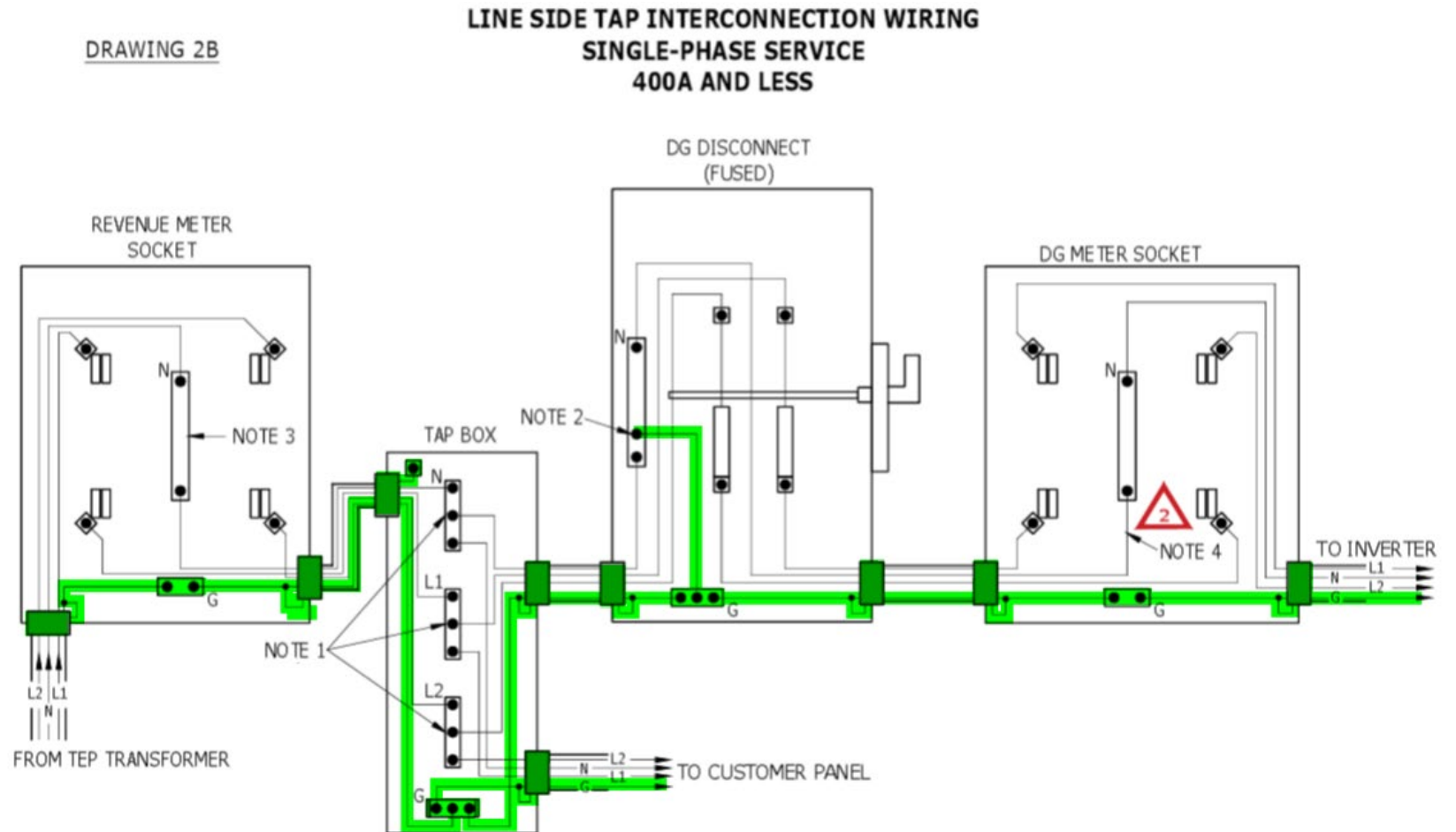
Ground Bonding –
connectors and
equipment cases

Line Side Taps

Multi-Meter
Installations

Follow plans / Updated
as-builts

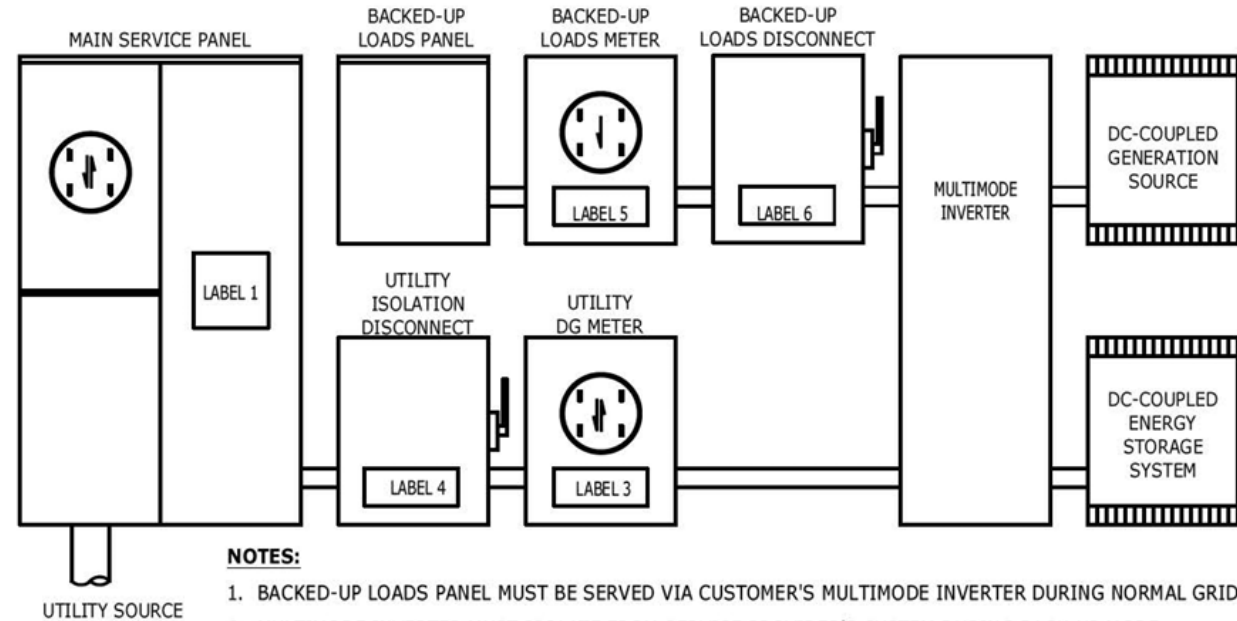
Photos submitted



TEP Warning Label Placards

- Basics
- Purpose
- Service Requirements call out equipment
- Ordering

DC-COUPLED CONFIGURATION #2 INTERCONNECTION LAYOUT SINGLE-PHASE SERVICE

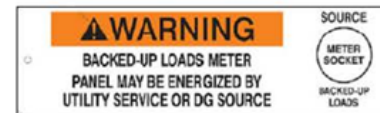


NOTES:

1. BACKED-UP LOADS PANEL MUST BE SERVED VIA CUSTOMER'S MULTIMODE INVERTER DURING NORMAL GRID OPERATION.
2. MULTIMODE INVERTER MUST ISOLATE FROM SERVICE PROVIDER'S SYSTEM DURING BACK-UP MODE.
3. SEE SR-702 PAGE 6 FOR NOTES REGARDING UTILITY DG METER SOCKET AND ISOLATION DISCONNECT.



LABEL 1
2-15-1912



LABEL 5
2-15-1904



LABEL 3
2-15-1911



LABEL 6
2-15-1900



LABEL 4
2-15-1902



PICTURE REQUIREMENTS

- Quality photos critical to speed of processing approvals
- Establishing Photo
- Detail Photos
- Label Photos
- Exterior Equipment
- Interior Equipment



ON THE HORIZON

- **Potential upcoming changes to SR-702 addressing equipment located across a fence, a wall or a pony wall**
- **Updates to Power Clerk to allow the communication of equipment location**



Electric Service Requirements (ESR)

The information contained on this page comprises the Electric Standards Requirements book distributed by TEP as a reference and a guide for regulations and practices regarding the connection and supply of electric service for TEP and UES Santa Cruz County.

For more information, see [SR-100](#).

Jump to a section: [Quick Access](#) | [Standards](#) | [DGIRs](#)



Tucson Electric Power

PowerClerk

WELCOME TO THE  DG ON-LINE APPLICATION SYSTEM



ENERGY STORAGE



ENERGY STORAGE PART II

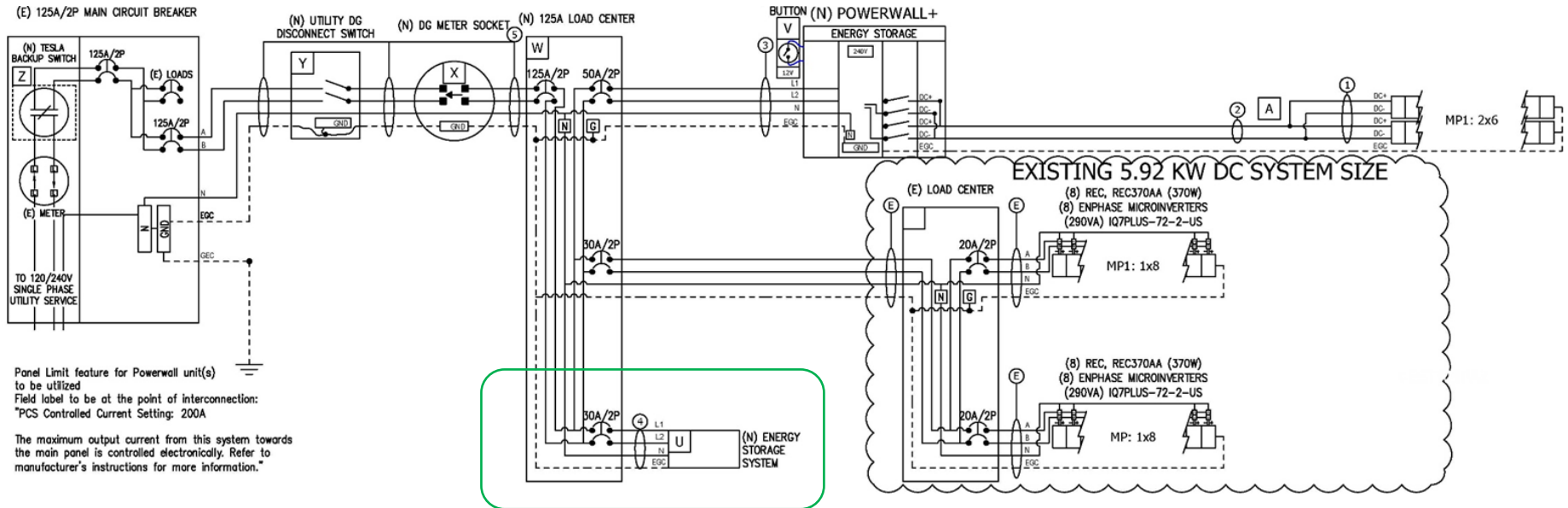
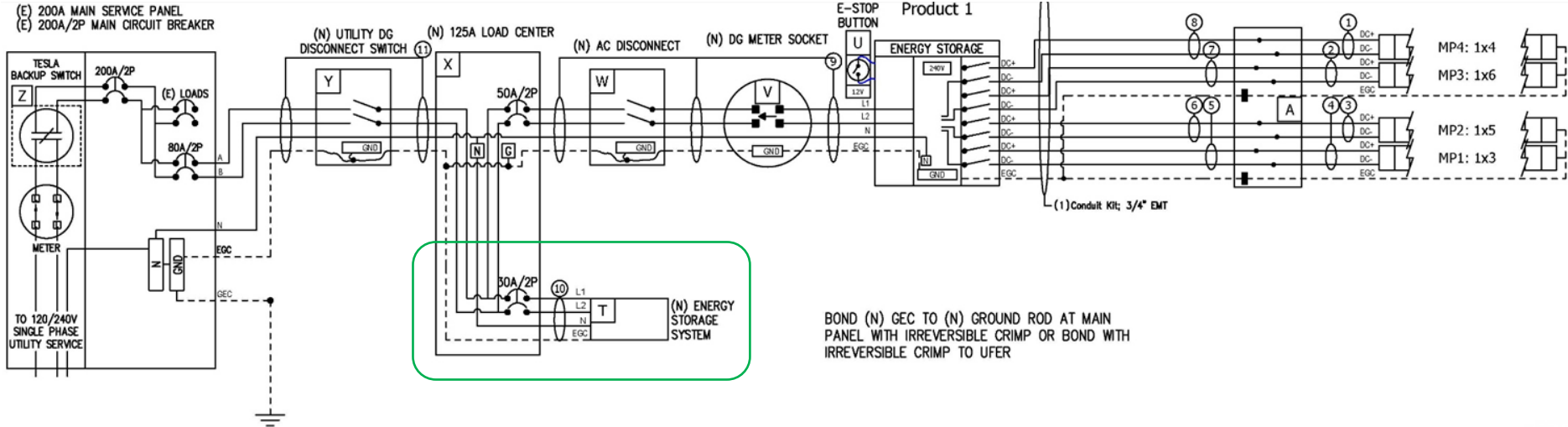
- **TEP SR-710 covers utility requirements for solar + energy storage installations.**
- **Sample configuration drawings are shown for one AC-coupled configuration and two DC-coupled configurations.**
- **Those sample configurations do not capture all permissible installations.**

1. I have a smart switch that separates my PV/batteries from the utility during a grid outage in order to supply my backup load panel. Why do I also need to install a utility isolation disconnect?
2. I have a hybrid inverter with inputs for both PV and batteries. Why is a DG production meter still required? It isn't capturing all of the PV production if the PV also charges the battery, correct?
3. Can I install a hybrid inverter for both solar and batteries and also install additional batteries? Is this an AC-coupled or DC-coupled system?
4. I have an existing solar PV system and want to add more solar and some battery storage. What is the best way to do that?
5. I have a hybrid inverter and a backup load panel that I want to supply from my PV/batteries during a grid outage. Is the SR-710 DC-coupled 2 configuration the way to go?
6. In addition to solar + energy storage, I also want to integrate a backup generator into my system. Can I do this? What might my system configuration look like?



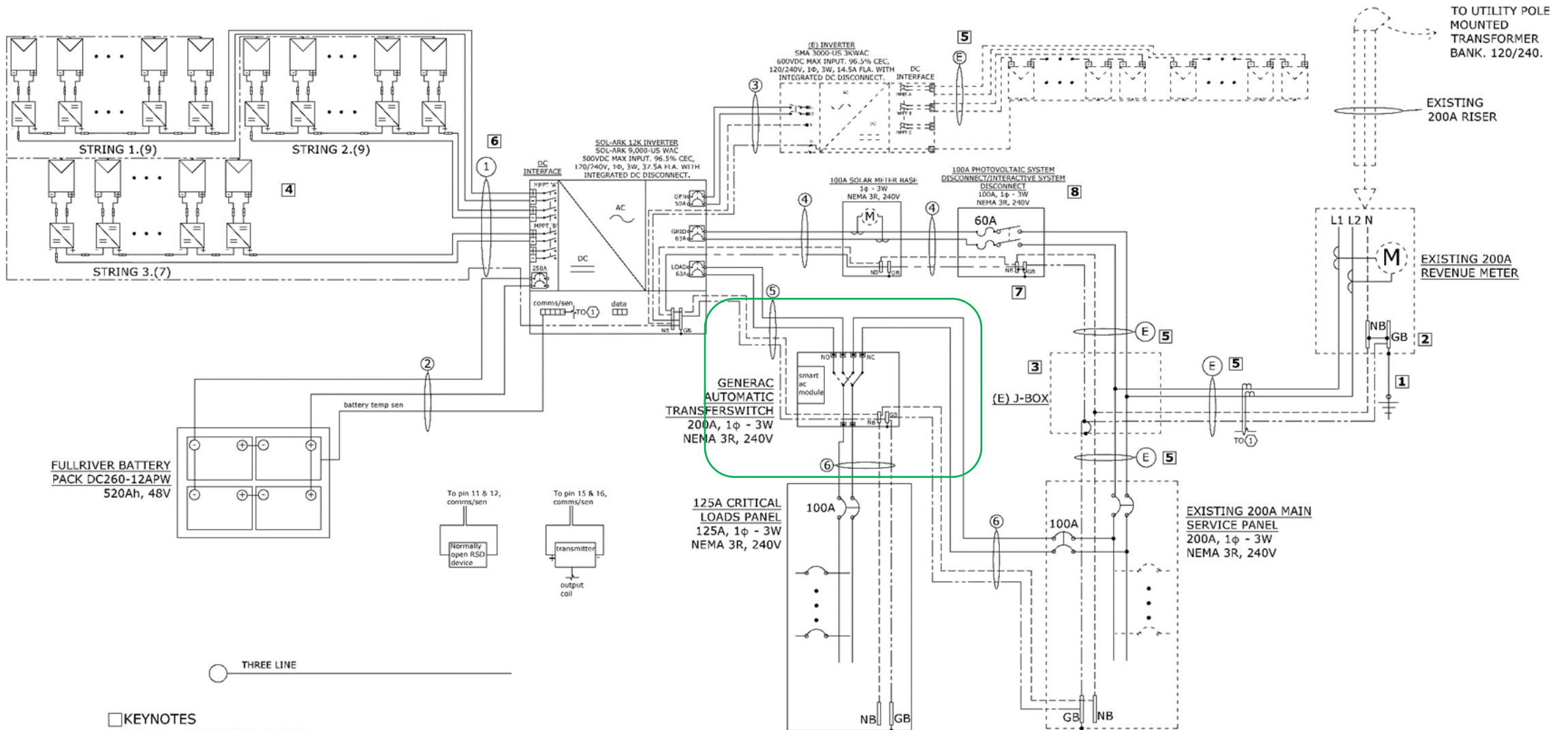
ENERGY STORAGE PART II

- ESS 3-LINE EXAMPLES, AC COUPLED/DC COUPLED #1



ENERGY STORAGE PART II

- ESS 3-LINE EXAMPLES, DC COUPLED #1



Questions?



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