DRE’s Mission:

To partner with our customers to sustainably integrate DERs to the distribution grid with a focus on safety, reliability, flexibility, power quality, and customer affordability.

How Do we Achieve The Mission?

DRE Mission: Integrate DERs, safely, reliably, affordably, while promoting a positive customer experience.

Manage Impacts to distribution system
- distribution system modeling
- technical screens, technical studies, hosting capacity, inverter/equipment settings

Ensure Safety of Equipment And Interconnection
- Develop, maintain, and revise tech reqs for safety and reliability (APS IRM, ESRM)
- Effectively communicate and share those requirements with our customers
- Review applications to ensure they meet requirements
- Provide Engineering support for Field services
Updates to APS Interconnection Requirements Manual v9.0

- Alignment with ACC Interconnection Process
- Guidelines for Meter Socket Adapters
- IEEE 1547-2018 & UL 1741
- Distributed Energy Resource metering
Alignment with ACC Interconnection Process

• Technical studies performed with agreement from Customer on projects that fail technical screens or are over 2 MW (Study Track)
• Clarification of requirements for systems in each review track
• Parallel Systems
  – Export vs Inadvertent Export
  – Maximum Capacity definition
• Non-parallel Systems
  – UL 1008 open transition transfer switch (Separate System)
  – No metering required
Interconnection Studies

- Required for systems 2MW and greater (Level 3 Systems)
- Only required for Level 1 and Level 2 Systems that do not pass screens or supplemental reviews
- Study results will be shared and discussed with customer upon completion
- Any equipment or facilities required as a result of studies will be mutually agreed upon prior to construction
IEEE 1547-2018 & UL 1741 SB

• Section 10.1(C) – UL 1741 SB certification to be required effective July 1, 2023.
• Submit inverter settings
  – Category B APS settings for voltage control (Volt-Var/Volt-Watt)
  – Default Category 3 settings for Abnormal Response
  – Settings shared on aps.com/dg
Distributed Energy Resource (DER) Metering

- PV Energy reporting
- Visibility to manage interconnected assets on the grid for reliability, safety, and operational/planning needs
- PV Production metering is required
- Stand Alone ESS
  - ESS meter or, In Lieu of an ESS Production Meter, customer can agree to provide ESS data to APS on an hourly basis
- For projects that include PV and ESS, PV production metering is required, however, no separate ESS meter is required. PV production meter should be located so that gross PV generation can be recorded.
Meter Socket Adapters

- UL 414 certified
- For Service panels no greater than 200A
- Sample drawings coming to aps.com/dg
- Technical requirements in Section 8.1(H)
- Option for Meter Socket Adapters are included on the Interconnection application
Timely Installation Guidance

- Service Equipment Modifications
- Supply Side Taps
Specific Requirements
Service Equipment Modifications

- ESS Systems
- Backup Generators
- Supply Side Taps
Service Equipment

References

- NEC 110.3(B)
- NEC 230.46
Example of UL Violation:

Before

After

CS reference #1903087
 Supply Side Tap - Definition

“The Tap is on the load side of the APS billing meter and ahead of the main service disconnect to ensure that the billing meter registers net energy flow.”
Supply Side Tap - Requirements

• Rigid Metal Conduit (RMC) From Tap to Fused Disconnect
  • Cannot be less than #2
• Service Disconnect within 10’ of Service Entrance Section (SES) (NEC 705.31)
  • Minimum Amp Rating of Service Disconnect is 60 A (NEC 230.79(D))
• NG Bond at Service Disconnect
  • GEC installed and connected to NEUTRAL (NEC 250.24(A)(1))
CS reference #1903087
Questions?