

United Power Interconnection Standards

Production Meter Required on ALL installations.

AC Disconnect requirement for Backup Gateway:

The intent of our requirement is to have a single lockable disconnect switch, which can provide a visible open point for our lineman, between our distribution system and all sources of energy at the residence (solar, battery, generator, vehicle-to-home interface, etc.).

AC Disconnect Switch Location Requirement:

Having the AC disconnect switch between the main service panel and the production meter puts the disconnect closer to the service entrance. Our expectation is that linemen will visit the service entrance first and will probably still be standing in that location when they look for the disconnect and having the disconnect installed closer to that service entrance makes it easier for them to find. We would not require anyone to make changes to any existing installations that had the disconnect on inverter-side of the production meter.

Production Meter Housing wiring:

Wires coming from solar must run through the top of the production meter.

Meter Collars:

Meter collar adapters may be used as a means of DER interconnection in locations that meet the criteria below:

- a) Meter socket is not part of a meter bank
- b) The meter collar does not replace the requirement for a visible, lockable disconnect on a solar installation.
- c) Meter collars shall not be allowed for battery storage or islanding

The meter collar adapter model shall be on the list of approved devices, found in FCU Interconnection Standards Annex D. [Image below]

Meter collar adapters containing an Automatic Transfer Switch (ATS) will require testing the operation of the electric meter disconnect functionality during the commissioning test, found in FCU Interconnection Standards Annex B. DER battery backup systems using meter collar adapters containing an internal ATS may not function when the visible break disconnect switch is opened by L&P crews during outages.

Approved Meter Collar Models

Manufacturer	Model	Approval Date	Notes
ConnectDER	Simple ConnectDER	4/12/2022	The Simple ConnectDER does not provide a visible open disconnect, so a separate disconnect switch will still be required. Only solar PV may be interconnected through using the Simple ConnectDER.
Tesla	Backup Switch	9/10/2021	The Backup Switch does not provide a visible open disconnect, so a separate disconnect switch will still be required. Utility operational procedures require line crews to open and lockout all DER system disconnect switches in the vicinity during both planned outage work and unplanned outage restoration. Based on information provided by Tesla, opening a disconnect that's located between the Backup Switch and inverter will cause a rapid shutdown to occur. This will disable the backup power capability of the battery while the disconnect is open, even if the disconnect does not

*****Backup Switch only allowed with a meter jumper cover*****

Islanding/Switching:

1.5 Islanding

Islanding occurs when a DER becomes separated from the main generation source on a distribution system but continues to independently serve a portion of the distribution system. DER shall be equipped with protective devices and controls designed to prevent the DER from being connected to a de-energized distribution system.

3.2 Interconnection Disconnect Switch

Each DER installation shall include a manually operated, lockable, disconnect switch with a visual break. The disconnect switch shall be visible, located near the FCU electric meter, and accessible at all times by FCU personnel to allow the DER to be disconnected safely during maintenance or outage conditions. The disconnect switch shall be rated to interrupt the maximum output of the DER, shall be rated for the voltage and fault current requirements of the DER, and shall meet all applicable NEMA, UL, ANSI, IEEE, and NEC standards as well as local and state electrical codes. The disconnect switch shall be permanently labeled with text indicating that the switch is for the DER. The labeling shall also clearly indicate the open and closed position of the switch. The disconnect switch must be located on the output or load side of the DER such that the entire DER can be isolated from FCU distribution system.

If the site contains more than one DER unit or system (e.g. PV and battery), a single disconnect switch may be used providing its rating is sufficient for all DER and opening it produces a visible open point

between all DER and the FCU system. If more than one disconnect is used, each must meet the requirements in this section, be located near the FCU electric meter, and be labeled to clearly indicate multiple disconnects are used to isolate the DER system(s) at the site. Other devices such as circuit breakers or fuses may be considered as a substitute for a disconnect switch under the following conditions: a) If a circuit breaker is used, it shall be draw-out and capable of being locked into the disconnected position b) If a fuse is used, it shall be capable of being removed from the bus to provide a visual open point c) The Operator or Operator's agents are available at all times to disconnect and lock-out breaker or remove and tag the fuses whenever requested by FCU

5.8 Disconnect Switch Operation

FCU operational procedures require line crews to create a visible break in the circuit between themselves and all potential sources of generation when working on deenergized equipment. The visible break disconnect switch will be used for this purpose during both planned outage work and unplanned outage restoration. Under no circumstances shall the Operator tamper with or attempt to close a disconnect switch that has been open and locked out/tagged out by FCU personnel.