



## LOAD SIDE TAP CONNECTIONS INTERCONNECTION REQUIREMENTS EXCERPT

A Load Side Tap constitutes a “tap” as defined in this document, and is subject to all applicable NEC requirements and/or requirements adopted by the Authority Having Jurisdiction. In addition, any such connection must comply with the APS ESRM and specifically with section 8.1(G) of the APS Interconnection Requirements manual.

The following requirements were prepared for applications where a generator is tapped on the load side of the main service disconnect:

1. The Tap originating from the SES shall terminate at an accessible and lockable overcurrent protective device in accordance with NEC Art 240.4.
2. For Tap Conductors 10 ft. or less (distance between SES and first overcurrent device), conductors shall be sized per 2014 NEC Art 240.21(B)(1).
3. For Tap Conductors 25ft. or less (distance between SES and first overcurrent device), conductors shall be sized per 2014 NEC Art 240.21(B)(2).
4. The Tap shall be made without altering any factory installed bus bars or conductors unless performed by the manufacturer or its designated representative.
  - a. No drilling, tapping or replacing of factory installed bus bars or conductors unless performed by the manufacturer or its designated representative.
  - b. Bonding jumpers per NEC Art 250.92(B) need to be installed around reducing washers and any eccentric or concentric fitting knockouts remaining.
  - c. Insulation piercing and threaded lug type connectors are allowed as long as they are protected by overcurrent protection devices on both ends.
  - d. If lugs are replaced to accommodate additional conductors, the panel manufacturer must specify a listed kit or give written approval of the parts to be used. Appropriate torque specs shall also be provided.
  - e. When connecting to a field conductor a UL listed tap should be used. Breaking the conductor should be avoided – using a lay in lug is preferred. The connector’s make and model number should be provided.
  - f. **Exception:** If panel manufacturer does not grant permission and/or have a kit to perform the Tap required, a field evaluation is required in order to perform the tap connections. In this case, the Customer shall provide APS the Letter of Compliance issued to the Nationally Recognized Test Laboratory (NRTL) certified by OSHA to perform the evaluation (i.e. CSA, TUV, UL, etc.) as well as a photograph of the approval sticker affixed to the SES at the time the work is completed in the field. A full list of authorized NRTL program providers can be located at <https://www.osha.gov/dts/otpca/nrtl/nrtllist.html>
5. Per NEC Art 225.32, the overcurrent protective device shall be readily accessible.
6. Per NEC Art 240.24(B), all overcurrent devices protecting the conductors supplying the premises shall be readable accessible to the occupant.
7. Per NEC Art 250.122(G), the equipment grounding conductor run with the tap conductors shall be sized per the SES Main overcurrent setting but shall not be required to be larger than the tap conductors.

**Note:** For a typical Load Side Tap installation, APS requires a two disconnect switch configuration. The first switch is fused and constitutes the Customer Fused Disconnect Switch as required by the NEC. The second switch is the Photovoltaic System Utility Disconnect Switch required by APS. The following example illustrates this configuration:

CUSTOMER DISCONNECT SWITCH  
[SPECIFY MAKE AND MODEL #]  
3 POLE, 100A, 120/208VAC

PHOTOVOLTAIC SYSTEM  
UTILITY DISCONNECT SWITCH  
[SPECIFY MAKE AND MODEL #]  
3 POLE, 100A, 120/208VAC

