

# Ameren Illinois Distributed Energy Resources | Bulletin 2024-1

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## Line (Supply) Side Taps – Service Rated Connectors

**With connectors now readily available that are UL listed as "service rated" or some similar designation, Code Enforcement communities now adopting 2020 and 2023 NEC Editions, and with the electric industry made aware in 2020 of this Code change, for reasons stated in 2020 / 2023 NEC 230.46 and the 2022 Ameren Electric Service Manual, for all areas not having yet adopted this requirement, all Line (Supply) Side Taps in Ameren service territory must be "service rated" (SR) or some similar designation effective June 17, 2024.**

Splices and taps on customer owned service conductors have been made various ways over the years. However, 2020 NEC 230.46 stated that effective January 1, 2023, pressured connectors and devices for splices and tap installed on service conductors shall be marked "suitable for use on the line (supply) side of service equipment" or equivalent. Some of these devices might have an "SR" designation on them as an alternative marking.

Some power distribution blocks already had this designation when bolted down in a cabinet as stated in 2017 NEC 314.28(E)(1) & 376.56(B)(1). This requirement for power distribution blocks was consolidated into 230.46 beginning with the 2020 NEC and continued to the 2020 NEC.

In the November 1, 2022 Ameren Electric Service Manual (ASM) release, in support of this upcoming NEC requirement, ASM Section 1500.02(9)(h) communicated that connectors used on service conductors must be "service rated."

**What conductors are the NEC referring to with this passage?** *Service Conductors* are customer owned conductors that begin at the utility point of delivery and extend into the customer's main disconnect(s). These main disconnect(s) may take the form of being several different types: Main Service Disconnect, Main PV Disconnect, Main Energy Storage System Disconnect, Main Fire Pump Disconnect, etc.

Insulated connectors – "Service Rated" must have "SR" or some similar designation for it to be used on service conductors. These markings may appear on a connector, smallest unit container or information sheet placed in the smallest unit container.

Commonly used connectors presently "**not service rated**" are known in the electric industry by various names, but to name a few that readily comes to mind: 1) Insulated Self-piercing 2) Hot Taps 3) Shark Bites and 4) Vampires. This type of connector does not have as much material and contact surface making up the connection as "service rated" connectors, nor do they have the clamping force to secure the conductor. When "biting down" through the insulation by tightening of the threaded bolt, the shark teeth cut into the conductor strands. Some examples of this style of connectors are as follows:



**Summary:**

With connectors now readily available that are UL listed as "service rated" or some similar designation, Code Enforcement communities now adopting 2020 and 2023 NEC Editions, and with the electric industry made aware in 2020 of this Code change, for reasons stated in 2020 / 2023 NEC 230.46 and the 2022 Ameren Electric Service Manual, all Line (Supply) Side Taps must be "service rated" (SR) or some similar designation **effective June 17, 2024**.