



NESC/NEC Code Assessment: Electric Vehicle Charger, installed on public Right-of-Way (ROW), powered by an adjacent building's electrical supply.

October 3, 2024

Question: Does a branch circuit feeding an electric vehicle (EV) charger that crosses over a property line become a service line and therefore violate the National Electrical Safety Code (NESC) and/or National Electrical Code (NEC)? NB: Quoted text in italics.

2023 National Electric Service Code

NESC Scope (Section 1, pg. 2):

NESC rules do not cover **Utilization Equipment** or **Premises Wiring** located beyond utility service points to buildings. See Figure 011-1:

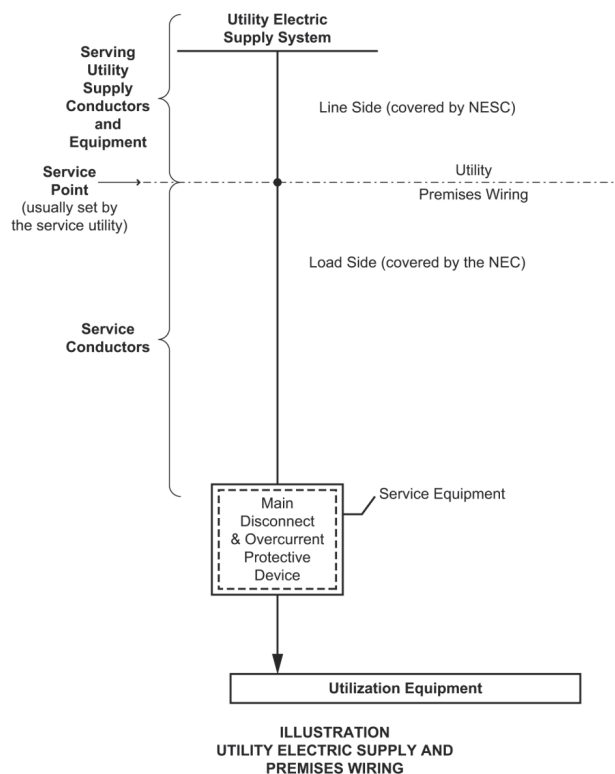


Figure 011-1—Service point—General illustration of what is covered and not covered by the NESC



Section 011. Scope

A. Covered

5. Utility facilities and functions on the line side of the service point supplied by underground or overhead conductors maintained and/or installed under exclusive control of utilities located on public or private property in accordance with legally established easements or rights-of-way, contracts, other agreements (written or by conditions of service), or as authorized by a regulating or controlling body.

The NEC is only applicable to underground conduit on the Line Side of the Utility Service Point. Typically, the electric utility has exclusive control over line side feeders in the right-of-way, however this does not preclude Premises Wiring to be permitted in the right-of-way.

Definitions:

Premises (Section 2, pg. 13):

The land and buildings of a user located on the user side of the service point (sometimes called the utility-user network point of demarcation for communication wiring) to electric supply, communication, or signal premises wiring.

The NESC does not include references to physical boundaries like property or lot lines, or private property vs. public right-of-way. Rather, Premises is defined as the point where the Utility Service Connection is made, regardless of the configuration of the site being served.

Electric Supply Lines (Section 2, pg. 12):

2. Those wires, conductors, and cables used to transmit electric or light energy and their necessary supporting or containing structures, equipment, and apparatus that are used to provide public or private electric supply or lighting service. Signal lines of more than 400 V and traffic signal lines of any voltage are supply lines within the meaning of the rules. Syn: supply lines.

It's Electric's chargers are fed from Premises Wiring, and should not be considered Electric Supply Lines under NESC, since the connection is made after the Utility Service Point.



Service Point (Section 2, pg. 15):

The point of connection between the facilities of the serving utility and the premises wiring.

NOTE: The service point is the point of demarcation between the serving utility and the premises wiring. The service point is the point on the wiring system where the serving utility wiring ends and the premises wiring begins. The serving utility generally specifies the location of the service point based on the utility's condition of service.

Because the location of the service point is generally determined by the utility, the service-drop conductors and the service-lateral conductors may or may not be part of the service covered by the NEC. For these types of conductors to be covered, they must be physically located on the premises wiring side of the service point. If the conductors are located on the utility side of the service point, they are not covered by the NEC definition of service conductors and are therefore not covered by the NEC.

Based on the definitions of the terms service point and service conductors, any conductor on the serving utility side of the service point generally is not covered by the NEC. For example, a typical suburban residence has an overhead service drop from the utility pole to the house. If the utility specifies that the service point is at the point of attachment of the service drop to the house, the service-drop conductors are not considered service conductors because the service drop is not on the premises wiring side of the service point. Alternatively, if the utility specifies that the service point is "at the pole," and the service-drop conductors are not under utility control, the NEC would apply to the service drop.

The Service Point is the limit of NESC's scope, but the Service Point is entirely unrelated to property of lot boundaries. In the example provided in this definition, the NESC describes the Service Point being at the overhead service drop (service point is within the property boundary) or "at the pole" (service point is in the right-of-way). Service Point and lot boundaries are not compatible in the NESC.

Premises Wiring (system) (Section 2, pg. 13)

Interior and exterior wiring, including power, lighting, control, communication, and other signal circuit wiring together with all their associated hardware, fittings, and wiring devices, both permanently and temporarily installed either (a) from the service point or



premises power source to the outlets, or (b) where there is no service point, from and including the non-utility power source to the outlets.

Such wiring does not include wiring internal to appliances, luminaires, motors, controllers, motor control centers, and similar equipment, nor does it include utility equipment and wiring on the utility side of the service point.

There is no provision or inference in the NESC that Premises Wiring converts to Electric Supply Lines by passing a lot line boundary.

Utilization Equipment (Section 2, pg. 19)

An electrical installation that uses electric or light energy for electronic, electromechanical, chemical, heating, lighting, testing, communication, signaling, or similar purposes on the premises wiring side of the service point.

NOTE: Utilization equipment and premises wiring on the load side of the service point is intended to be performed under the NEC, regardless of whether a utility has exclusive control.

It's Electric's EV chargers, even when situated in the right-of-way, are considered Utilization Equipment under NESC, since they are fed by Premises Wiring.

Conclusions:

- NESC is not applicable to It's Electric's ROW permit application.
- Per section 1, the NESC does not govern wiring or equipment occurring downstream from the Service Point. All of It's Electric's equipment is beyond the utility Service Point and therefore not governed by the NESC.
- Premises, as defined by NESC, is the utility Service Point, and not determined by municipal or property boundaries. A branch circuit feeding load remains Premises Wiring regardless whether it crosses a property line or building enclosure, or moves from a privately-owned building to public right-of-way.
- There is no provision of any kind in the NESC that infers Premises Wiring becomes an Electric Supply Line by virtue of crossing a property line.
- The power connection between It's Electric's right-of-way EV charger and the building is considered "Premises Wiring" and is therefore covered by the NEC.



2023 National Electric Code (NFPA 70):

Scope (Article 90.2):

(C) Installations Covered.

This Code covers the installation and removal of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cables for the following:

- (1) Public and private premises, including buildings, structures, mobile homes, recreational vehicles, and floating buildings*
- (2) Yards, lots, parking lots, carnivals, and industrial substations*
- (3) Installations of conductors and equipment that connect to the supply of electricity*

The NEC covers installations in “public and private premises.” NEC is compatible with It's Electric's proposal to install Premises Wiring in the Right-of-Way.

Definitions (Article 100):

In NEC, the definitions for **Service**, **Service Point**, **Premises**, and **Premises Wiring** match the NESC. Also matching the NESC, the NEC does not correlate property, lot, and municipal boundary lines with Service and Premises.

Branch Circuit:

The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s)

The NEC defines a branch circuit as a circuit that carries power from the final overcurrent device (e.g. circuit breaker) to the loads (outlets, appliances, etc.)



Equipment:

A general term, including fittings, devices, appliances, luminaires, apparatus, machinery, and the like used as part of, or in connection with, an electrical installation.

The NEC defines equipment as appliances, devices, etc. used in connection with or as part of an electrical installation.

Structure:

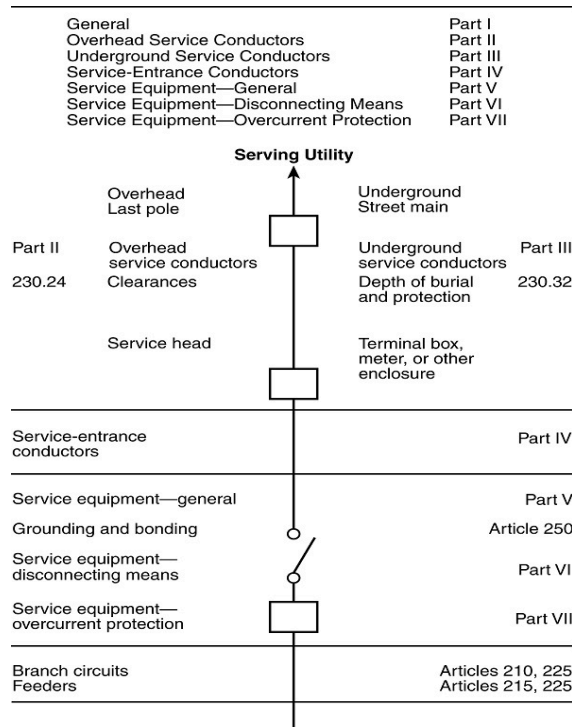
That which is built or constructed, other than equipment.

The NEC defines a structure as something constructed that is not equipment.

Other Relevant Sections:

Chapter 2 - Article 230 - Services

NEC 230.1 - Scope (refer to Figure 230.1 Services):





Chapter 6 - Special equipment - Article 625 - Electrical Vehicle Power Transfer System

NEC 625.40

Each outlet installed for the purpose of supplying EVSE greater than 16 amperes or 120 volts shall be supplied by an individual branch circuit.

EVSE equipment supplying greater than 16 Amps shall be supplied by a branch circuit.

Conclusions:

- The NEC allows for right of way EV chargers powered by adjacent buildings.
- It's Electric's submitted design follows the NEC as the charger is powered by a branch circuit (see NEC 625.40).
- A branch circuit does not become a service by passing beyond a property line into the public right of way (see NEC 100 - definitions).
- Services are defined as conductors "connecting the serving utility to the wiring system of the premises served."
- The NEC explicitly defines an EV charger as equipment, not a structure (NEC 625). According to the NEC, EV chargers are equipment, not structures. It's Electric proposes to run a branch circuit from a circuit breaker to the charger. Because the charger will be on the user's side of demarcation between the user and utility, it will be on premises regardless of where it is physically located. We are not providing service (i.e. powering one building directly from another) to another structure or to a different Premises.
- The charger is still on the property owners premises as the charger is on the "users side of demarcation between the utility and the user."