

Electric Service Requirements Manual White Paper for **INTERNAL** and **EXTERNAL** use

Subject: Electric Vehicle Charging Stations

Section 10.7 of the *Electric Service Requirements Manual* (ESR) briefly details the installation of electric vehicle (EV) charging stations. This supplemental white paper elaborates on those installations. The following information will assist designers in ensuring the selected transformer and service wire are of adequate size to provide necessary voltage to the customer's electrical panel for the specified load.

Residential One- and Two-Family Dwelling Requirements

- The customer must determine whether they have adequate electrical service for the number of planned EV charging stations. A service panel upgrade may be required. Contact the Power Company for additional information.
- The customer shall follow applicable NEC codes, in addition to state and local requirements.

Nonresidential Services and Residential Multifamily Dwellings

A. Charging Stations Inside Customer Facilities Requirements:

- For existing facilities, the customer shall provide the Power Company with the expected new load and charging frequency for the number of planned charging stations to determine whether existing feeder lines and equipment can provide the service, or whether they must be upgraded.
- For new facilities, the customer shall provide the Power Company with expected load and charging frequency of the station along with load information during initial service agreement.
- The customer shall be responsible for the electric vehicle supply equipment (EVSE), metering and maintenance associated with this equipment inside their facilities. The customer shall follow all NEC codes in addition to state and local requirements.

B. Charging Stations Served by Separate Circuits (Including Public Access Charging Stations) Requirements:

- The customer shall provide the Power Company with the expected new load and charging frequency for the number of planned charging stations. Charging stations served by a separate circuit and public-access charging stations require an additional transformer (company construction standard DA 421, EV Charging Station Demand. Contact the Power Company for additional information and requirements.
- The EVSE must be equipped with leakage and ground current monitors and protection with interruption capabilities and comply with NEC Article 625.
- Refer to ESR Section 9 for nonresidential services and information for direct-connect meter sockets. The meter sockets can be mounted on pedestals.
- The customer is responsible for obtaining electrical permitting from local authorities for on-street spaces treated as street features.
- The customer is responsible for the EVSE, metering, and maintenance associated with this equipment.
- The EVSE enclosure and internal components shall be constructed for use outdoors in accordance with UL 50, *Standard for Enclosures for Electrical Equipment*.