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Residential Load Calculation for Electric Vehicle Charging

ELC-20 CEC 2022

Electric Vehicle Charging Stations (EVCS) are considered to be continuous loads and only the full, non-demanded VA rating of the unit is to be used in electrical load calculations.

- 2022 California Electrical Code (CEC) Article 625.42 states that “Electric vehicle charging loads shall be considered to be continuous...”
- The load for an EVCS shall be calculated based on the ampere rating of the charger. CEC 220.14(A)
- There are no applicable demand factors for EVCS units. CEC Article 220, Part III Feeder and Service Load Calculations, Section 220.40
- Regarding CEC Article 220, Part IV Optional Feeder and Service Load Calculations, it is the policy of the City of Santa Ana to NOT consider an EVCS as a General Load [CEC 220.82(B)] but as a long-connected load similar to Heating and Air-Conditioning [CEC 220.82(C)]. CEC 90.4
- General loads can be considered as intermittent usage, whereas Heating, AC, and EVCS loads are considered to be persistent, long-connected loads that do not receive a reduced ‘demand’ load for calculations.
- When submitting electrical load calculations for services or feeders, include the full 100% EVCS VA rating in the total load.
- Note that the ampacity of conductors and overcurrent protective devices are to be computed based upon 125% of the EVCS rating as it is a continuous load. CEC 210.20(A), 215.3, 240.4