

PARTICIPATION COMMENTS FOR THE 15-DAY NOTICES DATED JUNE 16, 2011
Written comments are to be sent to the above address.

WRITTEN COMMENT DEADLINE: JUNE 30, 2011

Date: 6/30/11

From:

Wayne Stoppelmoor
Name (Print or type)



(Signature)

-- Schneider Electric

Agency, jurisdiction, chapter, company, association, individual, etc.

3700 6th St. SW
Street

Cedar Rapids
City

IA
State

52404
Zip

We (**do not**) agree with:

[X] The Agency proposed modifications As Submitted on Section No. A4.106.6

and request that this section or reference provision be recommended:

[] Approved [] Disapproved [] Held for Further Study [X] Approved as Amended

Schneider Electric / Square D supports the California Department of Housing and Community Development (HCD) amending language to address the future installation of electric vehicle charging infrastructure. However, we request the HCD to consider three key elements:

- 1) Multiple options permitting the most cost effective installation to encourage future installation.
- 2) Requiring the NEC to serve as the electrical infrastructure installation requirement document.
- 3) The application of energy management system with the EVSE.

Please find our proposed revisions below for consideration based on the currently proposed language.

Suggested Revisions to the Text of the Regulations:

A4.106.6. Electric vehicle (EV) charging. Dwellings shall comply with the following requirements for the future installation of electric vehicle supply equipment (EVSE).

~~1) Install a~~ 1) Install a listed raceway to accommodate a dedicated branch circuit. The raceway shall not be less than trade size 1. The raceway shall ~~be securely fastened at the~~ be run in accordance with the CEC between the main service or subpanel ~~and shall terminate~~ to a listed electrical enclosure, box, or cabinet in close

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~~proximity to the proposed location of the charging system into a listed cabinet, box or enclosure. Raceways are required to be continuous at enclosed or concealed areas and spaces. A raceway may terminate within 5 feet of a residence's parking area (garage, carport, driveway), to accommodate the future installation of residential electric vehicle supply equipment.~~

- 2) An individual 240V, 40A minimum branch circuit shall be installed in accordance with the CEC from the service panel or subpanel to an electrical enclosure, box or cabinet that is located within 5 feet of a residence's parking area (garage, carport, driveway), to accommodate the future installation of residential electric vehicle supply equipment. Since the EV load is a continuous load, the load calculations shall be based on 80 percent of the branch circuit rating.

Exception: The electrical enclosure, box or cabinet shall be permitted to be located in an attic or other approved location when it can be demonstrated that the area is accessible and no removal of materials is necessary to complete the final installation.

Exception: Other pre-installation methods approved by the local enforcing agency that provide sufficient conductor sizing and service capacity to install Level 2 EVSE at its maximum operating ampacity of (80A).

Note: Utilities and local enforcing agencies may have additional requirements for metering and EVSE installation, and should be consulted during the project design and installation.

A4.106.6.1.1 Labeling requirement. A label stating "EV CAPABLE" shall be posted in a conspicuous place at the service panel or subpanel and next to the ~~termination point~~ electrical enclosure, box or cabinet served by the raceway.

A4.106.6.1.2: Energy Managed EVSE. Where the EV Charging circuit is actively managed by an energy management means, the load calculation shall be permitted to be based on the energy management capabilities.

A4.106.6.2 Multi-family dwellings. At least 3 percent of the total parking spaces, but not less than one, shall be capable of supporting future electric vehicle supply equipment (EVSE).

~~§ 609.07 FA/06, 9\$:/F-\$-HIG-0' % , \$; < \$- /?/@7-\$FA/06, 9\$:/F-\$:A/7FA/B-\$, -\$4\$A-\$B7B2 6, 9\$6, :1/7-0C\$~~

- 1) A listed raceway to accommodate a dedicated branch circuit. The raceway shall not be less than trade size 1. The raceway shall be run in accordance with the CEC between the main service or subpanel to a listed electrical enclosure, box, or cabinet within 5 feet of a residence's parking area (garage, carport, driveway), to accommodate the future installation of residential electric vehicle supply equipment.
- 2) An individual 240V, 40A minimum branch circuit shall be installed in accordance with the CEC from the service panel or subpanel to an electrical enclosure, box or cabinet that is located within 5 feet of a residence's parking area (garage, carport, driveway), to accommodate the future installation of residential electric vehicle supply equipment. Since the EV load is a continuous load, the load calculations shall be based on 80 percent of the branch circuit rating.

~~When only a single charging space is required, install a listed raceway capable of accommodating a dedicated branch circuit. The raceway shall not be less than trade size 1. The raceway shall be securely fastened at the main service or subpanel and shall terminate in close proximity to the proposed location of the charging system into a listed cabinet, box or enclosure.~~

Exception: The electrical enclosure, box or cabinet shall be permitted to be located in an attic or other approved location when it can be demonstrated that the area is accessible and no removal of materials is necessary to complete the final installation.

Exception: Other pre-installation methods approved by the local enforcing agency that provide sufficient conductor sizing and service capacity to install Level 2 EVSE at its maximum operating ampacity (80A).

A4.106.6.2.2. Multiple charging spaces required. When multiple charging spaces are required, plans shall include the location(s) and type of the EVSE, raceway method(s), wiring schematics and electrical calculations to verify that the electrical system has sufficient capacity to simultaneously charge all the electrical vehicles at all designated EV charging spaces at their full rated amperage unless plans include an energy management system in accordance with A4.106.6.2.3. Plan design shall be based upon Level 2 EVSE at its maximum operating ampacity. Only underground raceways and related underground equipment are required to be installed at the time of construction.

Note: Utilities and local enforcing agencies may have additional requirements for metering and EVSE installation, and should be consulted during the project design and installation.

A4.106.6.2.3: Energy Managed EVSE. Where the EV Charging circuit is actively managed by an energy management means, the load calculation shall be permitted to be based on the energy management capabilities.

A4.106.6.2.3~~4~~ Labeling requirement. A label stating "EV CAPABLE" shall be posted in a conspicuous place at the service panel or subpanel and the EV charging space. Where a system is designed based in a load managed EVSE, the labeling shall include "Dependent upon Load Managed EVSE."

NOTE: Authority cited: Health and Safety Code Sections 17921, 17922 and 19990. Reference: Health and Safety Code Sections 17000 through 17060, 17910 through 17990 and 19960 through 19997.

Reason:

The raceways must be installed in accordance with the California Electrical Code which requires raceways to be continuous between enclosures. Raceways do not terminate in a space (attic), they terminate in an enclosure. The code should provide options for the most cost effective installation. If the user chooses to install the circuit breaker and use cable instead of a raceway, it should be clearly permitted. Whether you install a 1 inch conduit or a set of conductors there is clearly an expectation that further load will be placed in the service, therefore the installation of either the cable or the raceway should be permitted. Typical Level 2 EVSE is rated 32A and below, therefore a 40A circuit will ensure those system can be installed.

The original location requirement must have been deemed to be too restrictive; however, it is import to establish the desired state than guide the user to run a conduit to the attic when they could have more easily place the box in the wall of the garage a few feet from the service panel. We support the newly proposed language as an exception. It must also be made clear that the maximum ampere rating of a level 2 charger is 80A for the second exception.

The HCD noted that a 40A circuit may move the home over 2000 sqft to a significantly larger service. It was not clear how that determination was made. Since the EV charging load is considered continuous, then the 40A EV Charging circuit is a 32A load to the home. The homeowner should be given the option to consider the installation of the circuit or the raceway as the load calculation is simply being pushed off that will require a service change which means even if you have an "EV Capable" circuit, you do not have an "EV Capable" service panel.

Energy Management systems in homes or as a feature of the EVSE may permit the EV charging to be reduced or even shut down while other loads are active in the home or business. The energy management system must be recognized for not only new installations but to address concerns on the existing electrical infrastructure. Load Managing the EVSE for multi-family and other installations is a foreseeable technology that must be included in order to support safe, cost effective implementation of EV infrastructure installation.

The principals applied to installing an EV Capable circuit in the single family section is also applied to multi-family dwellings.

Thank you for your consideration.

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HEALTH & SAFETY CODE SECTION 18930

SECTION 18930. APPROVAL OR ADOPTION OF BUILDING STANDARDS; ANALYSIS AND CRITERIA; REVIEW CONSIDERATIONS; FACTUAL DETERMINATIONS

- (a) Any building standard adopted or proposed by state agencies shall be submitted to, and approved or adopted by, the California Building Standards Commission prior to codification. Prior to submission to the commission, building standards shall be adopted in compliance with the procedures specified in Article 5 (commencing with Section 11346) of Chapter 3.5 of Part 1 of Division 3 of Title 2 of the Government Code. Building standards adopted by state agencies and submitted to the commission for approval shall be accompanied by an analysis written by the adopting agency or state agency that proposes the building standards which shall, to the satisfaction of the commission, justify the approval thereof in terms of the following criteria:
- (1) The proposed building standards do not conflict with, overlap, or duplicate other building standards.
 - (2) The proposed building standard is within the parameters established by enabling legislation and is not expressly within the exclusive jurisdiction of another agency.
 - (3) The public interest requires the adoption of the building standards.
 - (4) The proposed building standard is not unreasonable, arbitrary, unfair, or capricious, in whole or in part.
 - (5) The cost to the public is reasonable, based on the overall benefit to be derived from the building standards.
 - (6) The proposed building standard is not unnecessarily ambiguous or vague, in whole or in part.
 - (7) The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate.
 - (A) If a national specification, published standard, or model code does not adequately address the goals of the state agency, a statement defining the inadequacy shall accompany the proposed building standard when submitted to the commission.
 - (B) If there is no national specification, published standard, or model code that is relevant to the proposed building standard, the state agency shall prepare a statement informing the commission and submit that statement with the proposed building standard.
 - (8) The format of the proposed building standards is consistent with that adopted by the commission.
 - (9) The proposed building standard, if it promotes fire and panic safety as determined by the State Fire Marshal, has the written approval of the State Fire Marshal.