

# Energy Management System (EMS) and Load Shearing Devices Plan review and Inspection Guidelines for One- and Two-Family Dwellings with EV Charging

Effective January 1, 2026 – Referencing the 2025 California Electrical Code (CEC)

## Purpose

This handout provides applicants with guidance on what the City of Daly City Building Division will review during plan check and field inspections for **Energy Management Systems (EMS)** or **manual load-sharing solutions** (e.g., selector switches) used in **one- and two-family residential dwellings** to avoid service upgrades when adding **Electric Vehicle (EV) charging stations**.

**Note:** This guidance applies strictly to **residential applications** in **one- and two-family homes**. It does **not apply** to commercial buildings, multifamily buildings, or other non-residential occupancies.

## Plan Review Checklist

Plans must demonstrate compliance with the California Electrical Code (CEC), specifically NEC Articles 220, 240, 250, 310, and 750.

1. **Electrical Load Calculation**
  - o NEC 220.83 or 220.87 (existing dwelling load calc with new load)
  - o If using NEC 220.87, peak demand data must exclude solar/battery backup systems.
2. **EMS Load Limiting Strategy**
  - o NEC 750.30(C): EMS must monitor, and control connected load to prevent service overload.
  - o Provide documentation or manufacturer specs showing programmed limits.
3. **Panel and Breaker Rating**
  - o NEC 240.4 and 310.15(B): Panel rating and main breaker must match load assumptions.
4. **System Schematic / Line Diagram**
  - o NEC 110.3(B): Show all managed loads and associated wiring.
5. **Device Listing**
  - o NEC 110.3 and 90.7: All components (e.g., EMS controllers, transfer switches) must be UL-listed or recognized by an NRTL.
6. **Labeling Plan**
  - o NEC 110.22, 210.5(C): Label all EMS-managed circuits and control points.
7. **User Controls**
  - o If using a manual switch, explain logic and location (e.g., EV/Dryer switch). Identify it clearly in the diagram.

## Inspection Requirements

The following will be verified in the field:

1. **Installed Devices Match Approved Plans**
  - o NEC 110.3(B): Ensure models, ratings, and EMS logic match submittal.
2. **Labeling Installed**
  - o NEC 110.22: All EMS-controlled circuits, switches, and panels must have permanent, legible labels.
3. **Accessibility**
  - o NEC 240.24: All EMS controls or switches must be readily accessible.
4. **Operational Check (If Applicable)**
  - o NEC 750.30(C): Inspector may request demonstration of EMS operation or switch logic to verify compliance.
5. **Load Coordination**
  - o If manual switch is used (non-coincident loads), confirm only one load is energized at a time and switch prevents concurrent operation.

## Questions?

Contact the Building Division at (650) 991-8061 or visit [www.dalycity.org/building](http://www.dalycity.org/building) for more information.

*This handout does not replace the California Electrical Code. It is intended as a summary of applicable requirements.*



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