

March 27, 2015

Subject: Comments on Proposed Revisions to the California Building Energy Efficiency Standards. Docket No. 15-BSTD-01

Please see below for our comments on the 45-day language:

1. Section 130.5(b) Disaggregation of Electrical Circuits and Table 130.5-B

- a. We recommend reducing the number of categories required to be disaggregated for electrical energy monitoring. For example, combine HVAC and plumbing electrical load types into one category.
- b. Rationale: This requirement from the 2013 language and the proposed 2016 language will add cost if the loads that need to be disaggregated would otherwise be on the same panel, such as plumbing and HVAC. Eaton is expected to soon have a panel with removable bus-bar covers so that different parts of the same panel could be metered, but there are no known equals. For a large emergency power system, there may be up to 20 categories of load because the emergency side of the ATS would have to be disaggregated too.

2. Section 130.5(c) Voltage Drop

- a. We recommend relaxing the maximum total voltage drop requirement.
- b. Rationale: The 2013 language limited the voltage drop in feeders to 2% and branch circuits to 3%. The proposed 2016 language combines the two into a single maximum of 5%. Limiting branch circuits to 3% is very difficult and may significantly increase wiring costs. For example, lighting circuits are often much longer than 117 feet. Oversizing that wiring beyond #10 AWG is not practical. Also, circuits are often not loaded to their full potential.

3. Section 130.5(d) Circuit Controls for 120-Volt Receptacles

- a. We recommend reducing the requirement for controlled receptacles in office spaces.
- b. Rationale: While we agree that, if used properly, switched receptacles may reduce energy use from plug loads at night, there is a significant associated cost increase and this requirement may not necessarily result in real energy savings if not used properly. The inconvenience of having power shut off for computers at night, for example, may lead users to simply circumvent the intent of this requirement, either by having the schedule changed to never turn off or by only using uncontrolled receptacles (and thereby possibly risking overloading those circuits). No energy would be saved if the controlled receptacles aren't used.