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The 45-day language version of Section 150.1(c)8 specifies separate criteria addressing the installation of a gas storage water heater that meets the federal minimum efficiency standard depending on whether the rated volume of the unit is 55 gallons or less or more than 55 gallons. In the comments we submitted on November 21, 2014 to Mr. Shirakh we explained that the minimum standard for gas storage models above 55 gallons will require all models in this subclass to employ condensing technology and the EF rating for those units will be at least .74. We further noted that based on the adjustment for gas instantaneous EF ratings applied by the CEC regulations, these condensing storage water heaters are considered by the CEC regulations to be equivalent to gas instantaneous model with an EF of .82. If one considers only the aspect of how efficiently these two types of water heaters heat water, the condensing storage water heater performs that function more efficiently than the gas instantaneous model with an EF of .82. The Initial Statement of Reasons" does not explain why added requirements are being imposed when a 65 or 75 gallon condensing gas storage water heater will be installed in a new home in 2016, even though that water heater is considered by the CEC to be equivalent in efficiency as a .82 gas instantaneous model. Furthermore, to our knowledge the January 2015 addendum to the CASE Report for the Residential Water Heater proposal did not analyze the comparative cost for the specific circumstance of the installation of a larger than 55 gallon condensing gas storage water.

We must repeat our concern that this proposal is being developed with an under appreciation of the significant increase in complexity regarding residential water heater efficiency ratings that will be occurring in the next several months. The changes to residential water heater efficiency standards and efficiency ratings will restructure the product lines that will be available in the market and redefine the efficiency ratings for the models in those product lines. Our November 21, 2014 comments summarized those changes and associated issues. We reaffirm our recommendation that the CEC defer any further consideration of this proposal at this time. Once the changes have been implemented and their ramifications identified, the consideration of the proposal to amend Section 150.1 (c)8 can be taken up again, as appropriate based on the better information that will exist at that time.

We have concern regarding a new requirement in 150.1(c)9 that, at best, reflects very poor standards writing, or, at worst, obfuscates the intent of the requirement. The provision refers to "air handler containing a combustion component" and specifies that such a product "shall be direct-vent, and shall not use air from conditioned space as combustion air." What type of equipment is this? The Building Energy Standards contain the following definition:

AIR-HANDLING UNIT or AIR HANDLER is a blower or fan that distributes supply air to a room, space, or area.

This is not a central furnace, as defined either in the CEC Title 20 Appliance Efficiency Standards or in long established industry standards. Accordingly, we understand this "air handler" requirement does not apply to a furnace. Continuing that further, it is clear to which products this proposal does not apply, but unclear as to what product is being addressed by the phrase "air handler containing a combustion component." Additionally, the requirement that it be direct vent is overly restrictive. Air for combustion can be provided to gas-fired products from outside the conditioned space without the equipment being direct vent. No information is provided in the Initial Statement of Reasons either to explain why this proposal was made or otherwise justify this requirement. During the November 2014 workshop I raised a question about this requirement. At that time it was acknowledged by Bruce Wilcox that the requirement was insufficiently clear and needed additional refinement. No modifications were made to this provision in the 45-day language. Since it is unclear what this overly restrictive proposal is addressing and no rationale has been provided to explain its value, we recommend that this provision be modified to delete this reference to "air handler containing a combustion component" and associated requirement as shown below:

9. **Space Conditioning Distribution Systems.**
All space conditioning systems shall meet all applicable requirements of A or B below:

A. High performance attics. Air handlers or ducts are allowed to be in ventilated attic spaces when the roof and ceiling insulation levels meet Option A or B in TABLE 150.1-A. Duct insulation levels shall meet the requirements in TABLE 150.1-A.

B. Duct and air handlers located in conditioned space. Duct systems and air handlers of HVAC systems shall be located in directly conditioned space, joist cavity between conditioned floors, or in sealed cavity below attic insulation. ~~Air handlers containing a combustion component shall be direct-vent, and shall not use air from conditioned space as combustion air.~~ All ducts shall be located in directly conditioned space and confirmed by field verification and diagnostic testing in accordance with Reference Residential Appendix RA3.1.4.3.8.

If there is a specific product that was intended to be covered by this requirement, then it needs to be rewritten to clearly identify that product and eliminate the overly strict requirement that it be direct vent. However in such a case the modifications to add clarity to this proposal are too late in the process to allow a full and complete consideration of it. This lack of transparency, which effectively precluded appropriate review and discussion of this proposal, is inconsistent with a regulatory development process that allows full participation by all interested parties. Accordingly, this proposal should be deleted and not be considered further for the 2016 edition of the Title 24 Building Energy Efficiency Standards

Respectively Submitted,

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