



February 5, 2008

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<b>DOCKET</b> 07-BSTD-1
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RE: 2008 Building Energy Efficiency Standards, Residential Ventilation

Dear Mr. Gekas:

A recent public comment on the residential ventilation requirements, submitted by Newport Ventures on December 20, 2007, stated objection to the central-fan-integrated (CFI) supply ventilation system based on simulation results reported in an LBNL publication<sup>1</sup>. That publication was a technical paper condensed from an earlier LBNL publication<sup>2</sup> which includes more details about the simulation approach used. It would be useful for interested parties to know that the earlier publication shows that the simulation results are applicable to:

1. Houses that have all air distribution ducts in attics;
2. Houses that have space conditioning systems that are oversized at least 50% compared to ACCA Manuals J and S;
3. Houses that set up the cooling thermostat from 78°F to 83°F every day (including weekends) and set back the heating setpoint from 68°F to 65°F every night;
4. Houses where the heating season starts and stops on pre-determined days so that heating is not allowed outside of those dates, and where the cooling season starts and stops on pre-determined days so that cooling is not allowed outside of those dates; and
5. PSC motor air handlers operating at high static pressure (>0.5 in w.c.).

All of those energy modeling assumptions are weighted against the central-fan-integrated supply ventilation system in ways that:

- a. Increase the central fan operation time charged to ventilation;
- b. Increase the power draw of the central fan; and
- c. Increase the air distribution system losses.

A more recent simulation study<sup>3</sup> addressed some of those deficiencies and includes more complete results for both standard and higher-performance houses. Those results were comparable to a 2001 field monitoring study<sup>4</sup> conducted by the NAHB Research Center for the

<sup>1</sup> Sherman, M. and Walker, I. 2007. "Energy Impact of Residential Ventilation Standards in California", LBNL 61282. Lawrence Berkeley National Laboratory, Berkeley, CA. <http://www-epb.lbl.gov/Publications/lbnl-61282.pdf>

<sup>2</sup> Walker, I. and Sherman, M. 2006. "Evaluation of Existing Technologies for Meeting Residential Ventilation Requirements", LBNL 59998. Lawrence Berkeley National Laboratory, Berkeley, CA. <http://epb.lbl.gov/publications/lbnl-59998.pdf>

<sup>3</sup> "WHOLE HOUSE VENTILATION SYSTEM OPTIONS – PHASE 1 SIMULATION STUDY", ARTI Report No. 30090-01, March 2007, Air-Conditioning and Refrigeration Technology Institute, Arlington, Virginia. <http://www.arti-research.org/research/completed/finalreports/30090-final.pdf>

<sup>4</sup> "Field Investigation Of Mechanical Ventilation Strategies In Residential Construction", Final Report, Part 1, pg. 114, Contract CX 826961-01-0, November 2001. U.S. Environmental Protection Agency, Washington, D.C.

U.S. EPA which stated that the operating costs for CFI supply ventilation systems were moderate and competitive. I respectfully recommend that the 45 day language for residential mechanical ventilation remain as it is.

Sincerely,

Armin Rudd  
Principal