

February 21, 2013

To: California Energy Commission

From: Dave Watson

Subject: 12-BSTD-05 - Comments about Second Draft 2013 Nonresidential Compliance Manual and Forms

Reference:

Page 4-90

Mechanical Systems Serving Non-Process Spaces – HVAC System Control Requirements

4th and 5th paragraphs

Chapter 3 – Mechanical Systems

For systems with DDC to the zone level the sensor(s) may be anywhere in the distribution system and the duct static pressure setpoint must be reset by the zone demand. Typically this is done by one of the following methods:

1. ~~either~~ Controlling so that ~~the most open~~ VAV box damper is 95 percent open.
2. ~~or~~ Using a “trim and respond” algorithm to continually reduce the pressure until one or more zones indicate that they are unable to maintain airflow rate setpoints
3. Other methods that dynamically reduce duct static pressure setpoint as low as possible while maintaining adequate pressure at the VAV box zone(s) of greatest demand.

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Reset of supply pressure by demand not only saves energy but it also protects fans from operation in surge at low loads. Chapter 12, Acceptance Requirements, describes mandated acceptance test requirements for VAV system fan control.

13.6.15 NA7.5.6 Supply Fan Variable Flow Controls Acceptance

Chapter 12 – Acceptance Requirements

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For systems with DDC controls with VAV boxes reporting to the central control panel, the pressure setpoint is reset by zone demand (box damper position or a trim and respond algorithm or other method that dynamically reduces duct static pressure setpoint as low as possible while maintaining adequate pressure at the VAV box zone(s) of greatest demand.).

At full flow:

- Supply fan maintains discharge static pressure within ± 10 percent of the current operating control static pressure setpoint
- Supply fan controls stabilizes within 5 minute period.
- At minimum flow (at least 30 percent of total design flow):
- Supply fan controls modulate to decrease capacity.

- Current operating setpoint has decreased (for systems with DDC to the zone level)
- Supply fan maintains discharge static pressure within ± 10 percent of the current operating setpoint.