

**FINAL AIR BALANCE CO., INC**
Testing & Balancing – Industrial & Environmental Systems

11952 Masters Court, Auburn, CA 95603

Ph: (530) 885-8188

License# 777985

California Energy Commission
Attention: Docket No. 12-BSTD-2
Dockets Office
1516 Ninth Street, MS-4
Sacramento, CA 95814
Docket@energy.ca.gov

Joe Loyer
Mechanical Engineer
California Energy Commission
1561 Ninth Street, MS 37
Sacramento, Ca. 95814
[\(916\) 654-4811](tel:(916)654-4811)
Joe.Loyer@energy.ca.gov

RE: Docket No. 12-BSTD-2: Proposed Threshold for Implementing Nonresidential
Mechanical Acceptance Test Requirements

Dear Commissioners and Mr. Loyer

My name is Chris Ruch. I am the Operations Manager at Final Air Balance Co. Inc. I am both TABB and NEBB certified. Final Air Balance Co., Inc. has been in the business of environmental systems testing and balancing (TAB) for over 12 years. The sole business of Final Air Balance Co. is in the field of testing, adjusting and balancing HVAC systems. Based in Auburn, we serve all of Central and Northern California.

The proposed Nonresidential Mechanical Acceptance Test Requirements for certification of Mechanical Acceptance Test Technicians states that the certification requirement shall not take effect until there are at least 1,000 Mechanical Acceptance Test Technicians certified to perform the specified Acceptance tests. (Section 10-103-A (b).)

In my opinion, this 1,000 technician threshold is too high and not adequately justified by the reality of the amount of work hours that this acceptance testing requirement will generate. At a 1,000 technicians, the job market for Mechanical Acceptance Test Technicians will already be oversaturated. To require that there be an oversaturation of available technicians before the acceptance testing certification requirement even becomes mandatory makes no sense. For one, it may be difficult to even reach this number of technicians since there will be little incentive for



Cert. 3222



Cert. BB104006C

technicians to spend the time and money to get certified if it is unlikely that there will be enough work available to make certification worth the cost and effort.

I have made an independent evaluation of the estimated number of work hours that the acceptance testing certification requirement will generate, and believe that a strong case exists for setting the technician threshold at 334 technicians, rather than 1,000 technicians. This will provide more than enough technicians to do the work without creating an initial disincentive for persons to obtain their certification prior to the acceptance testing certification requirement becoming mandatory.

The 334 technician threshold was calculated based upon my own extensive industry experience with the amount of man hours necessary to do this type of acceptance testing work.

According to the Initial Statement of Reasons, the CEC expects at least 20,000 nonresidential building will require acceptance testing each year. The currently proposed 1,000 technician threshold for 20,000 expected acceptance testing jobs would provide technicians an average of just 20 acceptance testing jobs a year.

Based on my review and familiarity with the Title 24 HVAC acceptance testing requirements and my professional experience both managing and actually conducting testing work on newly installed commercial HVAC systems, it will generally take one to three days to physically complete the Title 24 acceptance testing forms required for a commercial HVAC system. This works out to an average of approximately 2 days of acceptance testing work per HVAC system.

At two days per system, the currently proposed estimate of 20 systems per year per technician (Subsection 10-103-B(b) Industry Certification Threshold) would provide a technician with an average of just 40 days of work per year. Based on my experience in this industry, an estimated 40 days of work is not enough to drive the market when the estimated cost of certification per technician is \$2000 for the technician and \$500 for the contractor (Economic and Fiscal Impact Statement). As a result, the 1000 technician threshold would actually create a disincentive for technicians to be certified because they will know that by the time the certification requirement becomes effective, the market will already be oversaturated with certified technicians.

From working with technicians who are properly trained and those requiring additional training, it is my experience that a technician would require certification to provide him approximately 120 days of work in order to create a strong enough incentive for the technician and contractor to obtain certification. Accordingly, I recommend that the CEC should aim for an estimated 120 days of work per technician in order to provide sufficient incentive to drive the market towards investment in Title 24 Mechanical Compliance specific curriculum development, individual training, and contractor training.

At an average of two days of work per system, 120 days of work would mean a goal of providing 60 jobs per technician. 60 HVAC systems per year is the minimum number of jobs that a technician would likely want to know was potentially available in the marketplace before he or

she decides to become certified. 20,000 projects divided by 60 jobs per technician equals 334 certified technicians.

334 certified technicians is actually *double* the bare minimum number of technicians that would be necessary to ensure there is a sufficient availability of technicians to comply with these requirements. In my experience, full-time TAB technicians work approximately 240 days a year and could easily perform acceptance testing on 100 to 120 systems a year. Accordingly, a threshold of 334 certified technicians provides plenty of leeway in case more than 20,000 HVAC systems require acceptance testing. 334 certified technicians could handle 40,000 acceptance tests if needed.

A threshold of 334 certified technicians would also ensure that more than enough technicians would be available to perform this work without creating any backlog. At 120 days of work per year, approximately half of all technicians would be looking for work at any given time.

At the same time, a threshold of 334 certified technicians would ensure that there would be sufficient work available for certified technicians at the outset of this program to create an incentive for technicians to obtain their certification prior to the certification requirement commencing. The number of certified technicians will likely increase over time once the HVAC acceptance test certification requirements become mandatory. However, it makes little sense to set a certified-technician threshold for commencement of these requirements at a level that will over-saturate the market with technicians from the outset.

Proposed Algorithm

Technician Threshold = T

P = Annual number of permits likely to require Title 24 HVAC acceptance tests = 20,000 permits.

J = Minimum number of jobs per year per technician needed to provide sufficient incentive for certification = 120 work days ÷ 2 days of work per system = 60 jobs per year

$P \div J = T$

$20,271 \div 60 = 334$ **Required TAB Certified Technicians**

Thank you for your time,

Christopher Ruch
Operations Manager
Chrisr@finalair.com
(530)320-0876

