

DOCKETED

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November 07, 2016

California Energy Commission
1516 9th Street MS-14
Sacramento, CA 95814
Attn. Mr. Randy Brumley, PE

RE: NEBB ATTCP Annual Report

Dear Mr. Brumley,

This letter is to provide the California Energy Commission with a status update of the NEBB ATTCP program. Our previous update was provided to the CEC on July 4th, 2016.

TRAINING, CERTIFICATION & REPORTING ACTIVITY:

To date, NEBB has certified 1 employer and 1 technician for this reporting period (November 2015 – October 2016 as indicated in the Table #1 below:

TABLE #1 – MECHANICAL TEST TECHNICIANS IN PROCESS:

ACCEPTANCE TEST	TECHNICIANS	ACCEPTANCE TEST	TECHNICIANS
NRCA-MCH-02-A CV	1	NRCA-MCH-10-A	
NRCA-MCH-02-A VAV	1	NRCA-MCH-11-A	
NRCA-MCH-03-A	1	NRCA-MCH-12-A	1
NRCA-MCH-04-A	N/A (HERS)	NRCA-MCH-13-A	
NRCA-MCH-05-A	1	NRCA-MCH-14-A	
NRCA-MCH-06-A	1	NRCA-MCH-15-A	
NRCA-MCH-07-A	1	NRCA-MCH-16-A	
NRCA-MCH-08-A		NRCA-MCH-17-A	
NRCA-MCH-09-A		NRCA-MCH-18-A	

No projects or acceptance tests have been performed under the NEBB program during this reporting period. This is not to say that no tests have been performed, but none have been done through the Document Registry at this time since there is no mandate in place.

NEBB has had to take no action regarding any administrative actions to correct problems with Mechanical Acceptance Test Technician field performance.

2016 PROGRAM TRAINING UPDATES:

NEBB is currently allowing all candidates who apply for certification under either the 2013 or 2016 Standard to receive training and testing for both versions of our program included in the same fee.

NEBB has completed the conversion of our training materials for both ATT's and ATE's into an on-line/on-demand format. NEBB has also updated our materials to address the changes to the 2016 Building Energy Efficiency Standards. NEBB has two versions of training available; both

are in a stand-alone format. NEBB had originally intended to include the 2016 updates into the current 2013 training modules in an effort to avoid having ATT's take two versions of the training. However; after review of the changes between the 2013 and 2016 versions, it was decided that the changes were significant and numerous enough to require separate stand-alone versions of the training.

The training and exam modules requiring updating included the following:

- *Thermal Energy Storage (TES) Systems (NRCA-MCH-15-A)*
 - *Incorporates new acceptance criteria.*
- *Minor clarifications:*
 - *Outdoor Air (NRCA-MCH-02-A)*
 - *Supply Water Temperature Reset Controls (NRCA-MCH-09-A)*
 - *Hydronic System Variable Flow Controls (NRCA-MCH-10-A)*
 - *Fault Detection & Diagnostics for DX Units (NRCA-MCH-12-A)*
 - *Automatic Fault Detection & Diagnostic for Air Handling & Zone Terminal Units (NRCA-MCH-13-A)*

NEBB's 2016 training and certification program has a launch date of December 01, 2016.

PROGRAM UPDATES:

NEBB is currently accepting a C-4, C-20, or D-62 license for the contractors applying for certification as an Acceptance Test Employer.

NEBB has clarified the requirements for Professional Engineers wishing to become certified as ATT's and Firms who desire ATE Certification. The ATT application is vetted against the PE license number of the applicant; the ATE application is vetted against the PE license number of the licensed engineer who is in responsible charge for the Firm.

NEBB has received several requests from Commissioning Providers but has not included them in our program as they have no professional license, although many hold 3rd-party certifications.

PROPOSED CHANGES TO PROGRAM:

The NEBB Board of Directors is currently reviewing two substantial changes to the NEBB ATTCP program:

1. **Reciprocity:** There are numerous contractors within NEBB that also receive training and certification under other ATTCP (many of these individuals are also signatories to unions or are certified under NEMIC. It is the opinion of NEBB that requiring additional training from various ATTCP's in order to obtain certification credentials for the purpose of allowing a technician or employer to comply with a project specification creates an unnecessary burden on the citizens and businesses of California. It is NEBB's intention to propose a modification to our program whereby technicians and employers may obtain NEBB certification under reciprocity from other CEC-approved ATTCP's.
2. **Training and Exam Challenge:** NEBB has two existing certification programs for Certified Professionals (Testing and Balancing & Building Systems Commissioning) that already encompass the skills and knowledge necessary to perform the mechanical acceptance testing required under the Standard. It is the opinion of NEBB that requiring training for a skillset that the applicant already possesses is an unnecessary burden in terms of both time and money. NEBB desires to provide a challenge test for both of these existing NEBB certification programs to allow qualified NEBB Professionals and Firms to obtain ATT/ATE certified status without the burden of training for knowledge they already possess.

In both cases above, NEBB will be providing a supplemental application to the Energy Commission for approval once the programs are approved by NEBB's Board of Directors.

QUALITY ASSURANCE:

NEBB's quality assurance program under the 2013 Standard is in place; however the absence of the certification mandate essentially makes this program moot. Until such time as the energy commission mandates that the work be performed by certified acceptance test technicians, there is no incentive for contractors to spend the additional costs for training and certification. In fact, there is an incentive for them to not get certified and avoid the threshold. The lack of a mandate also causes the document registry to be dormant, and this is the tool used by NEBB to monitor the acceptance test forms and generate audits.

The 2016 Building Energy Efficiency Standards require that the ATTCP review a random sample of no less than 1 percent of each technician's completed compliance documents, and perform randomly selected on-site audits of no less than 1 percent of each ATT's completed acceptance tests. The statute is not clear with respect to whether the 1 percent requirement is a random sample of *all* completed tests, or 1 percent of *each* type of completed test. For the purposes of NEBB's quality assurance program, NEBB has based the requirement on a 1 percent random sample of all completed tests by each entity as submitted through the document registry system. However; NEBB has determined that the requirement of auditing *completed* acceptance tests on-site is impractical for several reasons:

1. Access to a project and the associated HVAC equipment after occupancy to the space has been turned over requires obtaining legal permission for both activities, and the current owner has no incentive or requirement to provide that access unless they are having performance issues related to the work associated with the acceptance testing.
2. Access to a project during construction requires those individuals (and companies) working on the project to have site-specific certificates of insurance. This is a requirement of the property owners, developers, and general contractors. Further, these requirements (and levels of insurance) vary by entity and location.
3. Contact information for the owner or end user may not be readily available after completion of a project. In many cases, the end user of the affected equipment may be a lessee and have lease provisions that either prevent or restrict access to the space or equipment.
4. Control setpoints, damper positions, and other changes to system parameters are often made after the property is turned over to the operating staff; in some cases changes are made to the systems themselves (damper adjustments, fan speed adjustments, etc.). These changes often would not allow the acceptance test to meet minimum standards of repeatability even if the tests were originally performed properly.

After discussions with insurance carriers, contractors, and building owners, it has been determined by NEBB that none of the available options are feasible. For this reason, NEBB has adopted the audit process described below in order to comply with the quality assurance requirements of the 2016 standard. NEBB clearly believes that this process is not in strict compliance with the Standard, but it is our understanding that this method has been accepted by the California Energy Commission for lighting ATT's and ATE's.

DESK AUDIT PROCEDURES

1. Through the document registry, a random sample of 1% of all forms submitted by an ATT will be randomly selected. This selection will be done on a quarterly basis.
2. The Document Registry will continually check all submitted forms for irregularity in the forms and notify NEBB of anything that might warrant investigation. Once notified, the NEBB Title 24 Program Director and Technical Committee will review the forms and determine if contact with the ATT or ATE is warranted. If the Committee determines that an investigation is warranted, the certified entity will be contacted by NEBB and

an investigation performed. If the investigation yields proof or high probability of incorrect procedures being performed by the ATT or ATE, NEBB will take appropriate measures based on the severity of the error. These measures may include mandating additional training and testing, or decertification.

3. In addition to the automatic triggers provided for above, a desk audit will be performed on 1% of all completed acceptance tests uploaded by each ATT/ATE through the document registry. The selected forms will be reviewed by NEBB's Title 24 Program Director and Technical Committee to ensure that the forms have been properly completed and submitted. Irregularities in the forms (such as identical serial numbers, incomplete data, suspicious data i.e. winter temperatures recording during summer months, etc.) will trigger further investigation.
4. If the Committee determines that an investigation is warranted, the certified entity will be contacted by NEBB and an investigation performed. If the investigation yields proof or high probability of incorrect procedures being performed by the ATT or ATE, NEBB will take appropriate measures based on the severity of the error. These measures may include mandating additional training and testing, or decertification.

ON-SITE (SHADOW) AUDIT PROCEDURES

With respect to shadow-audit procedures, it is critical to understand that the vast majority of acceptance testing is performed almost immediately prior to occupancy. As such, it is the nature of construction projects that scheduled activities have many last-minute changes – especially as equipment is started and tested. One delay often triggers delays in subsequent activities. This makes the use of a 3rd party auditor highly problematic. Third party entities often require a great deal of advance notice for scheduling (two weeks or more is not uncommon), and even a small delay that bumps activities a short period of one or two days could result in the third party auditor not being available for weeks due to previously scheduled audits on other projects. For this reason, NEBB believes that it is critical that the auditors be permitted to be Certified ATT's and employees of the ATE's performing the acceptance tests. By utilizing this approach, the challenges associated with insurance requirements, scheduling conflicts, site access, etc. are alleviated since the ATE is already contractually permitted to be on the site and any scheduling or start-up issues then become a contractual matter between the ATE and their customer without involving any outside parties.

The NEBB shadow audit process will be as follows:

1. Through the document registry, a random sample of 1% of all forms submitted by an ATT will be randomly selected. This selection will be done on a quarterly basis. The completed forms will be reviewed by NEBB's Title 24 technical committee.
2. NEBB will require each Certified Acceptance Test Employer to have a "Designated Acceptance Test Technician". This individual will be the responsible person of record for that particular ATE and will be responsible for the audit. This individual will be responsible for visiting the project and watching the performance of the other ATT's as they perform the work.
3. The Registry will track the number of forms submitted by the ATT and ATE and will notify both the employer and the Designated ATT that an audit is required once the total number of test forms submitted reaches a threshold of 100. If an ATT or ATE has not uploaded at least 100 forms by the end of September of that calendar year, an audit notice will be triggered and sent to the ATT and ATE.
4. Upon notice of an audit, the Designated ATT will schedule an audit on the ATE's next project. The Designated ATT will visit the project and watch the performance of the ATT as he performs the work on the required number of forms as indicated by the audit notice.

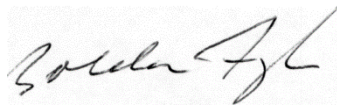
5. Upon completion of the audit, an audit certification will be sent to NEBB stating the number and type of acceptance tests that were witnessed, and shall be signed by the Designated ATT performing the audit.
5. The completed acceptance test and audited forms will be reviewed by NEBB's Title 24 Program Director and/or Technical Committee to ensure that the forms have been properly completed and submitted. Irregularities in the forms (such as identical serial numbers, incomplete data, suspicious data i.e. winter temperatures recording during summer months, etc.) will trigger further investigation.
6. If the Title 24 Technical Committee determines that an investigation is warranted, the certified entity will be contacted by NEBB and an investigation performed. If the investigation yields proof or high probability of incorrect procedures being performed by the ATT or ATE, NEBB will take appropriate measures based on the severity of the error. These measures may include mandating additional training and testing, or decertification and will be directed at not only the ATE and ATT performing the test, but the Designated ATT as well.

It should be noted that NEBB will be meeting with all other ATTCP's on Monday, November 14th in an attempt to consolidate all audit procedures to be consistent across all of the certification programs. Additional details will be provided to the Energy Commission after that meeting.

We hope that the California Energy Commission finds this report acceptable. By issuance of this report, NEBB certifies that it has met all requirements for this program.

Please do not hesitate to contact us if you have any questions regarding this report.

Best regards,

A handwritten signature in black ink, appearing to read "Bohdan Fedyk", is written over a light gray rectangular background.

Bohdan Fedyk,

NEBB Technical Director/Title 24 Program Director