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July 01, 2016

California Energy Commission 1516 9th Street MS-14 Sacramento, CA 95814

Attn. Mr. Randy Brumley, PE

RE: NEBB ATTCP Update Report for 2016 Energy Standard Requirements

Dear Mr. Brumley,

This update report is to provide the California Energy Commission with a status update of the NEBB ATTCP program and the necessary changes to our program required by the 2016 Building Energy Efficiency Standards.

2016 Program Training Updates:

NEBB has completed the conversion of our training materials for both ATT's and ATE's into an on-line/on-demand format and that includes updating our materials to address the changes to the 2016 Building Energy Efficiency Standards, with the exception of several discrepancies in the 2016 compliance manual. Confidential copies of the updated training modules have been uploaded through the CEC e-filing system. NEBB has two versions of training available; both are in a stand-alone format. Our original intent had been 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 – especially since the certified ATT mandate will not be in place before 2016. However; after review of the changes between the 2013 and 2016 versions, it was decided that the changes were significant enough to require separate stand-alone versions of the training.

2016 Program Testing Updates:

NEBB has completed the conversion of our testing materials for both ATT's and ATE's to address the changes to the 2016 Building Energy Efficiency Standards, with the exception of several discrepancies in the 2016 compliance manual. Confidential copies of the updated exams have been uploaded through the CEC e-filing system; the issues in the 2016 compliance manual discovered during training development and requiring clarification from the CEC are noted in the training modules.

2016 Program Compliance Updates:

The 2016 Building Energy Efficiency Standards include an additional 1% audit requirement that was not part of the 2013 Standard (the 2013 Standard did not include a quantified requirement). NEBB's current program includes a "desk-audit" that allows for automatic review of all submitted forms, and further investigation based on the nature of the items discovered during the audit. NEBB investigated several options for compliance with the 1% audit requirement, including:

- 1. Shadow audits; this would allow a representative of the ATTCP to visit the project and watch the performance of the ATT as they perform the work.
- 2. On-site audits; this would allow a representative of the ATTCP to visit the project with the ATT after the acceptance testing is completed and submitted.

3. Video audits; this would allow employees of the ATE to provide videos of the work being performed by their fellow ATT and submitted to the ATTCP for review and approval by a technical committee.

Site investigations are impractical for several reasons:

- Access to a project and the associated HVAC equipment after 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 certificates of insurance (site-specific). This is a requirement of the property owners, developers, and general contractors.
- 3. 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.
- 4. Video-taping or photography of the work performed is not permitted on many sites; this includes public and private facilities.
- 5. Video-taping does not work well for documentation of acceptance testing to the level that would be required for the audit to determine compliance. For example, a video can show the ATT performing the test, but it cannot simultaneously show the testing being performed simultaneously with the position of the probes, data being displayed on the instruments, etc.
- 6. The costs associated for an on-site audit would be cost prohibitive. Our estimates are that for an on-site audit, the fees for each ATT would be a minimum of \$1,500 per day. Since the audit takes almost as long as the original acceptance test, this could potentially cost each ATT (or ATE) over \$10,000 per year.

After discussions with insurance carriers, contractors, and building owners, it has been determined by NEBB that none of the available options are feasible nor would be in compliance with the Standard. It is our recommendation to the CEC that the audit process be paper-based at a higher percentage (perhaps 3% or 5%) than the 1% rate. If the paper audit reveals a high likely hood that the tests were performed incorrectly, further training could be mandated for the ATT. Repeated errors by the ATT of the same kind would result in decertification.

2016 Program Launch Date:

The launch date for the 2016 certification program has not been determined; the launch date will be discussed with the CEC staff in order to determine the most appropriate date as there are several factors to be discussed in conjunction with that date. For example, projects that are permitted under the 2013 requirements will still need to have acceptance testing performed in accordance with the 2013 requirements well into 2017. For this reason, it will likely be our recommendation to the CEC that the 2016 certification program be operational September 1st, 2016, and the 2013 training programs to be retired as of 12/31/2017.

By issuance of this report, NEBB has met all requirements for this program.

We hope that the California Energy Commission finds this report acceptable. Please do not hesitate to contact us if you have any questions regarding this report.

Best regards,

Golden Agl

Bohdan Fedyk, Technical Director & Title 24 Program Leader

National Environmental Balancing Bureau